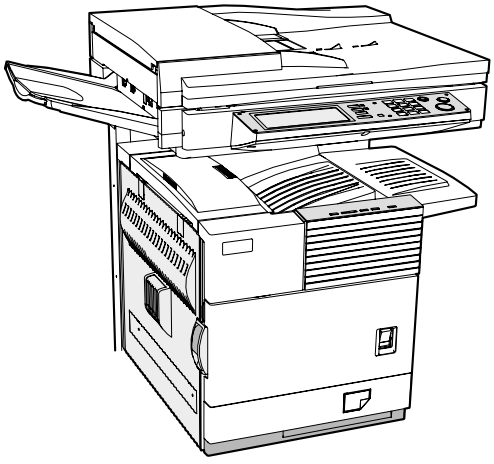
SHARP SERVICE MANUAL

CODE : 00ZARM350UA1E



LASER PRINTER

MODEL AR-M350U/M450U AR-M350N/M450N

OPTIONS AR-P14

[1] INTRODUCTION

The AR-M350U/M450U and AR-M350N/M450N are minor change models based on the AR-M350/M450.
This service manual only provides information on these minor changes.
In addition to this service manual, the documents listed below are required to properly maintain these machines.

•AR-M350/M450	Service Manual : 00ZARM350/A1E	Parts Guide : 00ZARM450/P1E	Circuit Diagram : 00ZARM350/C1/
•AR-P350/P450	Service Manual : 00ZARP350/A2E	Parts Guide : 00ZAR350LPP1/	Circuit Diagram : 00ZARP350/C1/
•AR-NC5J	Service Manual : 00ZARNC5J/A1E		

Note: Depending on the option, additional service documentation may be required.

[2] LIST OF DIFFERENCES FROM AR-M350/M450

A.Product composition

	Model Name	Printer Option Model	NIC Standard Model	Note
Base Engine		AR-M350U AR-M450U	AR-M350N AR-M450N	
Print Speed		35ppm 45ppm	35ppm 45ppm	
Multi Function Controller	AR-M11	Not Available	Standard	
Multi Function Controller(for U-Model)	Not Available	Standard	Not Available	Not registered as a product
Print Server Card	AR-NC5J	Not Available	Standard	
Printer Extension Kit	AR-P14	Option	Not Available	*1

*1: Installation of the AR-P14 on the AR-M350U/M450U will provide similar functionality to that of the AR-M350/M450.

Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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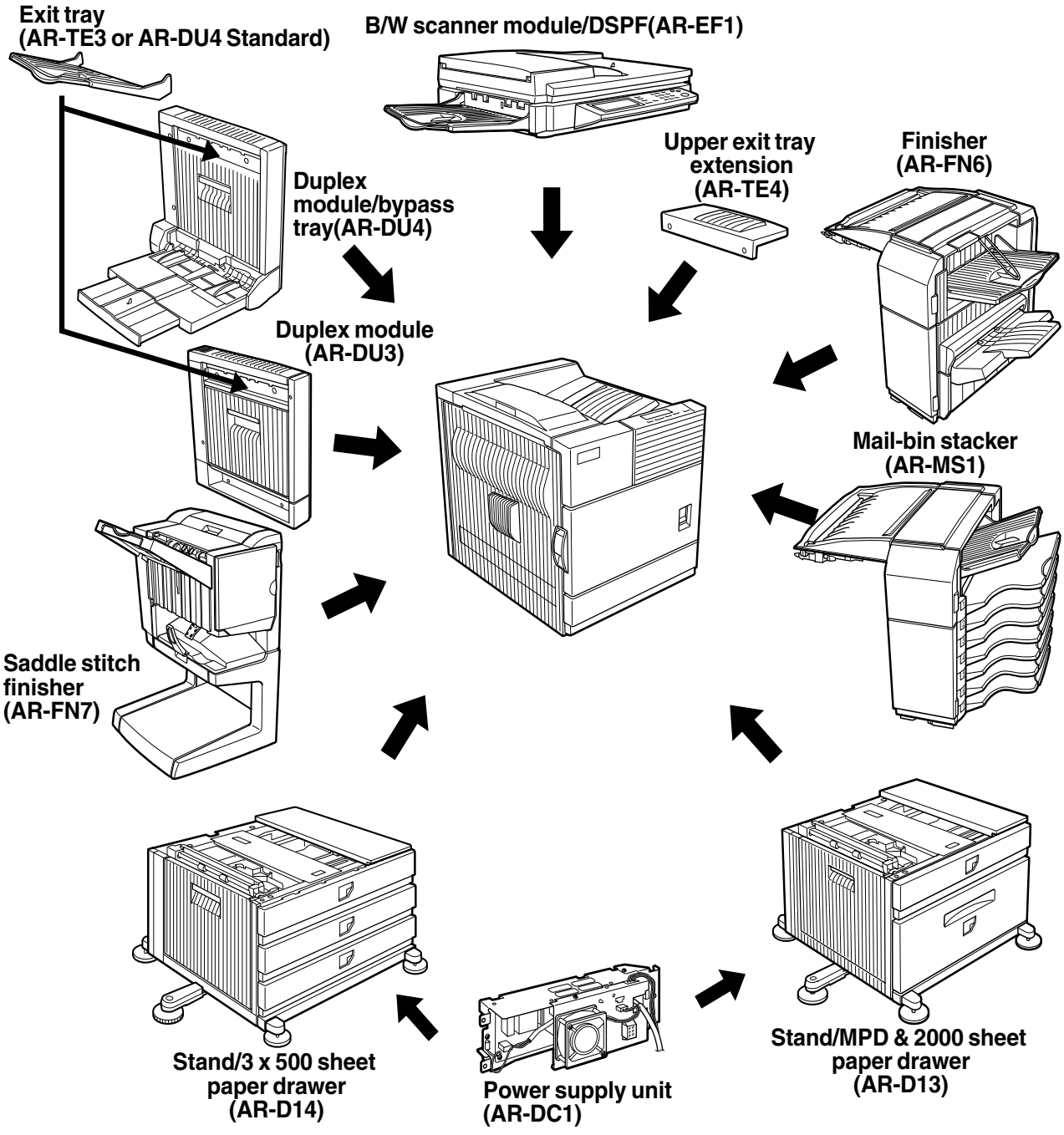
The contents are subject to change without notice.

[3] CONFIGURATION

1.System Configurations



2. Standard

Category	Model Name	Other options required for the installation/mounting. (Options must be ordered separately.)	Remarks
MFP model (35ppm)	AR-M350	• B/W Scanner module/DSPF (AR-EF1) • Scanner Rack(AR-RK1) • Stand/MPD&2000 sheet paper drawer (AR-D13) or Three paper drawer stand (AR-D14) • Power supply unit (AR-DC1)	
MFP model (45ppm)	AR-M450		
MFP model (35ppm)	AR-M350U		
MFP model (45ppm) (Without network printer function)	AR-M450U		
MFP model (35ppm) (With NIC card (standard))	AR-M350N		
MFP model (45ppm)	AR-M450N		

3. List of combination of peripheral devices

A.AR-M350U/M450U

As shown in the table below, some other peripheral devices (B) may be needed for installation of a peripheral device (A) and some peripheral devices cannot be installed together.

			B																					
			B/W scanner module/DSPF	Scanner rack	Stand/3 x 500 sheet paper drawer	Stand/MPD & 2000 sheet	Duplex module/bypass tray	Duplex module	Saddle stitch finisher	Finisher	Mail-bin stacker	Exit tray	Upper exit tray extension	Punch unit	Multi-function controller board	Print server card	PS3 expansion kit	Network scanner expansion kit	Facsimile expansion kit	Fax memory (8 MB)	Power supply unit	Hard disk drive	Network printer kit
	Related for scanner feature																						
A	B/W scanner module/DSPF	AR-EF1	—	○	○*1										○						○		
A	Scanner rack	AR-RK1	○	—	○*1										○						○		
	Related for paper feed unit																						
A	Stand/3 x 500 sheet paper drawer	AR-D14			—	×															○		
A	Stand/MPD & 2000 sheet paper drawer	AR-D13			×	—															○		
A	Duplex module/bypass tray	AR-DU4			○*1		—		×					×							○*2		
A	Duplex module	AR-DU3			○*1			—													○*2		
	Output units																						
A	Saddle stitch finisher	AR-FN7			○*1		×	○	—	×		×	×								○		
A	Finisher	AR-FN6			○*1				×	—	×		×	×							○		
A	Mail-bin stacker	AR-MS1			○*1					×	—		×								○		
A	Exit tray *4	AR-TE3					○*1		×	×	×	—		×									
A	Upper exit tray extension	AR-TE4								×	×		—										
A	Punch unit	AR-PN1			○*1		×	○	○	×		×		—							○		
	Related for extension of functions and others																						
A	PS3 expansion kit	AR-PK1															—						
A	Network scanner expansion kit	AR-NS2	○	○	○*1											○		—					
A	Facsimile expansion kit	AR-FX5	○	○		○*1													—				
A	Fax memory (8 MB)	AR-MM9	○	○		○*1													○	—	○		
A	Power supply unit	AR-DC1				○*1															—		
A	Hard disk drive	AR-HD3																				—	
A	Multi-function controller board *5	AR-M11	○	○		○*1									—								×
A	Print server card *6	AR-NC5J														—		○*1					○*1
A	Network printer kit	AR-P14														○							—

○ = Must be installed together.
○*1 = Any of the units must be installed together.
○*2 = Must be installed for installation of the stand/3 x 500 sheet paper drawer or the stand/MPD & 2000 sheet paper drawer.
× = Cannot be installed together.
*3 = Standard
*4 = AR-DU4 Standard
*5 = Attachment of the AR-P14 provides the similar functions.
*6 = Not Available

B.AR-M350N/M450N

As shown in the table below, some other peripheral devices (B) may be needed for installation of a peripheral device (A) and some peripheral devices cannot be installed together.

A			B: B/W scanner module/DSPF	Scanner rack	Stand/3 x 500 sheet paper drawer	Stand/MPD & 2000 sheet	Duplex module/bypass tray	Duplex module	Saddle stitch finisher	Finisher	Mail-bin stacker	Exit tray	Upper exit tray extension	Punch unit	Multi-function controller board	Print server card	PS3 expansion kit	Network scanner expansion kit	Facsimile expansion kit	Fax memory (8 MB)	Power supply unit	Hard disk drive	Network printer kit
Related for scanner feature																							
B/W scanner module/DSPF	AR-EF1		—	○	○*1										○						○		
Scanner rack	AR-RK1		○	—	○*1										○						○		
Related for paper feed unit																							
Stand/3 x 500 sheet paper drawer	AR-D14				—	×															○		
Stand/MPD & 2000 sheet paper drawer	AR-D13				×	—															○		
Duplex module/bypass tray	AR-DU4				○*1		—		×					×							○*2		
Duplex module	AR-DU3				○*1			—													○*2		
Output units																							
Saddle stitch finisher	AR-FN7				○*1		×	○	—	×		×	×								○		
Finisher	AR-FN6				○*1				×	—	×		×	×							○		
Mail-bin stacker	AR-MS1				○*1					×	—		×								○		
Exit tray *4	AR-TE3						○*1		×	×	×	—		×									
Upper exit tray extension	AR-TE4									×	×		—										
Punch unit	AR-PN1				○*1		×	○	○	×		×		—							○		
Related for extension of functions and others																							
PS3 expansion kit	AR-PK1																—						
Network scanner expansion kit	AR-NS2		○	○	○*1											○		—					
Facsimile expansion kit	AR-FX5		○	○	○*1														—				
Fax memory (8 MB)	AR-MM9		○	○	○*1														○	—	○		
Power supply unit	AR-DC1				○*1																—		
Hard disk drive	AR-HD3																					—	
Multi-function controller board *3	AR-M11		○	○	○*1										—								
Print server card *3	AR-NC5J															—							
Network printer kit *6	AR-P14																						—

○ = Must be installed together.
○*1 = Any of the units must be installed together.
○*2 = Must be installed for installation of the stand/3 x 500 sheet paper drawer or the stand/MPD & 2000 sheet paper drawer.
× = Cannot be installed together.
*3 = Standard
*4 = AR-DU4 Standard
*6 = Cannot be attached.

[4] SPECIFICATIONS

1. Basic Specification

A. Base Engine (AR-M350U/M350N/M450U/M450N)

(1) Form

AR-M350U/M350N/M450U/M450N	Console type

(2) Engine speed

Paper size	AR-M350U/N	AR-M450U/N
A4, 8.5" x 11"	35ppm	45ppm
A5R/5.5" x 8.5"R	35ppm	45ppm
B5	35ppm	45ppm
B4/8.5" x 14	20ppm	22ppm
A3/11" x 17"	17ppm	20ppm

(3) Engine composition

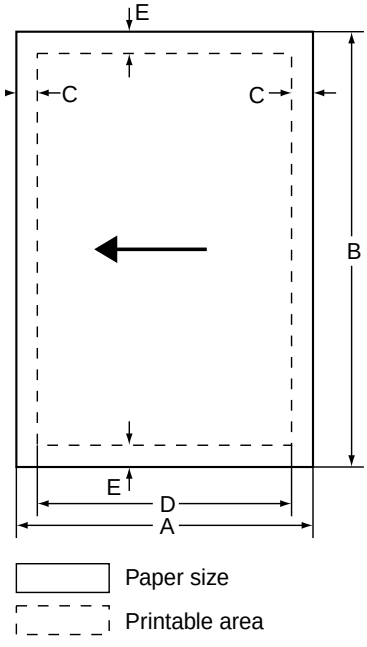
Photoconductor type	OPC (diameter of photoconductor : ø30mm)
Record method	Electrophotograph (laser)
Development method	Dry-type dual-component magnetic brush development
Charge method	Charged saw-tooth method
Transfer method	Transfer roller
Cleaning method	Counter blade
Fusing method	Heat roller
Used toner disposal	Toner recycling system

(4) Engine resolution

Resolution	Write :600dpi
Smoothing	Write :1200dpi equivalent
Gradation	Write :2 levels

(5) Printable area

The print area of this product is shown below.



If a printer driver for Windows or Macintosh is used for printing, the printable area will be smaller. The actual printable area depends on the printer driver to be used.

(in mm)

Paper size	A	B	C	D	E
A3	297	420	4	289	4
B4	257	364	4	242	4
A4	210	297	4	202	4
B5	182	257	4	168	4
A5	148	210	4	140	4
Japanese postcard	100	148	4	92	4
Ledger	279	432	4	271	4
Legal	216	356	4	208	4
Foolscap	216	330	4	208	4
Letter	216	279	4	208	4
Executive	184	267	4	183	4
Invoice	140	216	4	132	4
Com-10(envelope)	105	241	4	97	4
C5(envelope)	162	229	4	154	4
Monarch(envelope)	98	191	4	90	4
DL(envelope)	110	220	4	102	4
ISO B5(envelope)	176	250	4	168	4

(6) Warm-up

Warm-up time	less than 80 seconds
Pre-heat requirement	Required
Jam recovery time	Target: about 30 seconds (Under standard condition of 60 seconds left after side cover opening, polygon motor halt)

(7) Power source

Voltage	100V system	200V system
	100-127V	220-240V
Frequency	50/60Hz	50/60Hz

(8) Power consumption

	AR-M350U/N	AR-M450U/N
Max. Power consump.	1440W	1440W

(9) Energy Star benchmark

	AR-M350U/N	AR-M450U/N
Low power mode	40W	75W
Transition time to Low power mode	60min	60min

(10) Noise

	AR-M350U/N	AR-M450U/N
At working	less than 6.8B	less than 6.8B
At waiting mode	less than 5.0B	less than 5.0B

* Showing noise benchmark in each model as a whole system.

(11) Dimensions

External dimensions (WxDxH)	428x552x469 (Only main unit) (mm) 16.9"x21.7"x18.5"
Occupied space dimensions (WxD)	963x685 (mm) *1 25.7"x22.3"
Weight	AR-M350U/M450U:Approx.38.9kg (Only main unit) Approx.99kg *1 AR-M350N/M450N:Approx.39.9kg (Only main unit) Approx.100kg *1

*1: With B/W scanner module/DSPF, Scanner rack, Large capacity paper feed desk, Power supply unit and Upper exit tray extension

B. Document Feeding Equipment

(1) One-drawer tray (included in the base engine)

Paper feed method	One-drawer tray	
Sizes to be fed	A4, B5, 8.5" x 11"	
Paper capacity	500 sheets (at 80g/m²)	
Media available for paper feeding	Plain paper 60 - 105g/m², 16 - 28lbs	
Paper type	Plain, recycled, pre-printed, pre-punched, color, letter head	
Paper size switching	To be switched by user (paper size to be entered from the operation panel).	
Dehumidification heater	Not provided	
Balance detection	Provided (paper empty and 3 steps)	
Default size setting	100V system	200V system
	8.5" x 11"	A4
Mounting/demounting of the tray	Provided	

C. Output Equipment

(1) Face-down Exit Tray (included in the base engine)

Output position/ method	Face-down output at the upper side of main unit
Output paper capacity	400 sheets (80g/m² sheet)
Output paper size	A3, B4, A4, A4R, B5, B5R, A5R 11 " x 17", 8.5" x 14", 8.5" x 13", 8.5" x 11 ", 8.5" x 11 "R, 5.5" x 8.5"R Executive, postal card, Monarch (98 x 191) Com-10 (105 x 241), DL (110 x 220), C5 (162 x 229), ISO B5 (176 x 250)
Spec of media for paper output	Tracing paper : 52 ~ 59g/m² / 14 ~ 15lbs Plain paper : 60 ~ 128g/m² / 16 ~ 34lbs Index paper : 176g/m² / 47lbs Cover paper : 205g/m² / 54 ~ 55lbs Transparency firm
Remaining paper detection	Not provided
Exit tray full detection	Provided

2. Specific Function

A. Printer Function

(1) Platform

IBM PC/AT (Include compatible machine) Macintosh (680x0), Power Macintosh, iMac, G3Macintosh

* For Macintosh OS, the PS3 expansion kit and NIC card are required.

(2) Support OS

Custom PS	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
Custom PCL5e/6(XL) SPDL	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
PPD	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
	Mac OS 8.5.1 - Mac OS 9

* For Macintosh OS, the PS3 expansion kit and NIC card are required.

(3) PDL emulation

PCL6, PCL5e compatible, PostScript Level 2, PostScript 3 compatible (PS3 expansion kit is required.)

(4) Print Function

a. General

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Copies	1 - 999	1 - 999	1 - 999	1 - 999
Orientation	Yes	Yes	Yes	Yes
Duplex print	Yes	Yes	Yes	Yes
Saddle stitch	Yes	Yes	No	N/A
Binding edge	Left/top/ right	Left/top/ right	Long/short	Long/short
N-up	2/4/6/8	2/4/6/8	2/4*3*4	2/4/6/9/16
N-up direction	Fixed	Fixed	Fixed	Selectable
N-up border line	Yes	Yes	Yes(always)	Yes

b. Paper input

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Paper size	Yes	Yes	Yes	Yes
Custom paper size	1 size	1 size	3 sizes*3*5	N/A
Source selection	Yes	Yes	Yes	Yes
Different first page	Yes	Yes	N/A	Yes
Transparency inserts	Yes	Yes	N/A	Yes

c. Paper output

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Output tray selection	Yes	Yes	Yes	Yes
Mail bin	Yes	Yes	Yes	Yes
Staple	Yes	Yes	Yes	Yes
Offset	Yes	Yes	Yes	Yes
Punch	Yes	Yes	Yes	Yes

d. Graphic

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resolution	600/300 dpi	600 dpi	600 dpi	600 dpi
Halftone	N/A	Yes	Yes	N/A
Graphic mode	Yes	N/A	N/A	N/A
Smoothing	Yes	Yes	Yes	Yes
Toner save	Yes	Yes	Yes	Yes
Photo enhancement	Yes*8	Yes	N/A	N/A
Negative image	N/A	Yes	Yes	Yes
Mirror image	N/A	Horizontal/ vertical	Horizontal	Yes
Zoom	N/A	N/A	Yes	Yes
Fit to page	Yes	Yes	N/A	N/A

e. Font

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resident font	45 fonts	136 fonts	136 fonts*6	35 fonts
Download font	Bitmap TrueType, Graphic	Bitmap Type1 TrueType	Bitmap Type1 TrueType	N/A

f. Others

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Watermark*7	Yes	Yes	Yes	Yes
Overlay	Yes	Yes	N/A	N/A
Job retention*1	Yes	Yes	N/A	Yes
Account control	Yes	Yes	N/A	Yes
Custom settings	Yes	Yes	N/A	N/A
Automatic configuration*2	Yes	Yes	N/A	Yes
Job end notification	Yes	Yes	N/A	N/A

* 1 In the models without a hard disk drive, an optional hard disk drive must be installed .
* 2 Functions when peripheral devices are installed.
* 3 Not supported in the Windows NT 4.0 environment.
* 4 2/4/6/9/16 is supported in the Windows 2000 environment.
* 5 Only one size is supported in the Windows 2000 environment.
* 6 Only 35 fonts are supported in the Windows NT 4.0 environment.
* 7 This function is limited for PPD.
* 8 PCL6 only

(5) Compatibility

PCL 5e compatibility	Target for PCL5e is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PCL6 compatibility	Target for PCL6 is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PostScript Compatibility	Roman PostScript is targeted to be compatible with Adobe PostScript as performed in HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility.

B. Expanded RAM

Installation of an expanded RAM will avoid the following status.

1) Time out error reduction
2) Spool time reduction
3) Avoidance of VM error / memory full

Use commercially available RAM with the following specifications.
Note: If RAM used does not meet the follow specifications, the copier may not recognize the additional RAM or its capacity correctly.

<Spesification>

DIMM TYPE	168pin 3.3V Unbuffered SDRAM DIMM Non-ECC
DIMM capacity	64MByte, 128MByte, 256MByte
CAS LATENCY	CL=2
SDRAM CLOCK	For PC100, PC133
SPD	Supporting
Parity	Not support
ECC	Not support

<Operation-assured Memory> (As of March / 2001)

Manufacture	Capacity	Model name	RAM CHIP name	Note
Kingston Technology	128MB	KVR133X64C3/ 128	HYB39S64800BT -7.5	
	128MB	KVR133X64C3 -128	D456821G-A75 -9JF	
	256MB	KVR133X64C3 -256	HY57V28820AT-H	
Viking Compornents	64MB	VIK8641CL2	µPD456841G5 -A80-9JF	
	64MB	VIK8641CL2	D456841G5-A80 -9JF	
	128MB	VIK6642CL2	TC59SM708FT-80	
	128MB	VIK6642CL2	D4564841G5-A80 -9JF	
	256MB	VIK2642CL2	TC59SM708FT-80	
Memory Card Technology	64MB	DM864VS65804X -7G	GM72V66841XT75	
	128MB	DM1665VS65804 X-7G	HY57V64820HG	

C. Scanner function

*Scanner function, the NIC card and Network Scanner kit are required.

(1) Scanner function

Scanner mode	Scan to E-mail (Internet FAX) Scan to Server (Client PC)

(2) Support System

Embedded server	SMTP server FTP server
Protocol	TCP/IP

(3) Support Image

Format	TIFF, PDF, TIFF-F * Selectable for each page
Compression method	Uncompressed, G3(1-dimension) *1, G4 *2 *1 G3 (1-dimension) = MH (Modified Huffman) *2 G4 = MMR (Modified MR)

(4) Transmission Mode

DSPF/OC transmission switching	Available (Switching during the reading is not feasible)

(5) Image Process

Half tone reproduction	Equivalent to 256 levels
Exposure adjustment	Light / Auto / Dark
Quality selection	Half-tone ON/OFF
Resolution*	Normal (200x200dpi) Fine (300x300dpi) Super fine (400x400dpi) Ultra fine (600x600dpi) Varies with the file type/transmission method

(6) Original Memory

Standard	Commonly use ERDH area of memory.
Memory expansion	Special : As per ERDH memory

(7) Specified Destination

Specified destination	Specifying by one-touch or group
One-touch*	Max. 500 destinations (in conjunction with the one-touch dial of FAX) Max. 100 destinations can be registered for FTP and Desktop.
Group*	To be registered in one-touch
Program	Available

(8) Specified Multiple Destinations

Specified destination	Specifying by one-touch or group
No. of registration	Max. 300 items (in conjunction with those of FAX)
Sequential broadcasting	Available (E-mail only. It is not available for FTP/Desktop.)
Simultaneous FAX transmission	Available (Specifying multiple destinations of FAX, E-mail or FTP and broadcasting by a single scan)

O : Available

(9) Functions

Transmitting functions	Rotating transmission	Available (to be matched with FAX specification)
	Long length original transmission	Not Available
	Verification stamp function	Option
Report/list functions	Transmit/receive record	Available
	Transmit/receive result	Available
	Address/phone directory list	Available
	Group list	Available
	ID/sender list	Available
	Program list	Available

D. Copy function

(1) Copy Speed

	AR-M350U/N			AR-M450U/N		
	Actual	Reduction	Enlargement	Actual	Reduction	Enlargement
A4, 8.5"x11"	35	35	35	45	45	45
A4R, 8.5"x11"R	25	25	25	30	30	30
A5R, 5.5"x8.5"R, Invoice-R	35	35	35	45	45	45
B5	35	35	35	45	45	45
B5R, Exective-R	25	25	25	30	30	30
B4, 8.5"x14"	20	20	20	22	22	22
A3, 11"x17"	17	17	17	20	20	20
Extra, Envelope	17	17	17	20	20	20
Japan P/C	In case of printing on post card, engine speed can vary with system configuration, because next paper is fed after machine completely output previous page.					

* Figures in reduction/enlargement are represented by those at the ratio to show slowest speed

(2) First Copy Time

Conditions: A4 or 8.5"x11"P from front tray of PPC, without HDD and with polygon motor running.

	AR-M350U/N	AR-M450U/N
Document glass *1	Less than 5.3 seconds	Less than 4.6 seconds
DSPF	Less than 6.0 seconds	Less than 5.3 seconds

*1 During OC/high-speed mode

(3) Job Speed

	AR-M350U/N	AR-M450U/N
S → S *1	33 cpm (94%)	42 cpm (93%)
S → D *2	32 cpm (91%)	40 cpm (88%)
D → D *3	32 cpm (91%)	40 cpm (88%)

*1 S → S : A4 / 8.5" x 11"P original 5 sheets copy 5sets
*2 S → D : A4 / 8.5" x 11"P original 10 sheets copy 5sets
*3 D → D : A4 / 8.5" x 11"P original 5 sheets (10 pages) copy 5sets

Note: First copy time has been factored into calculation resulting in reduced CPM.

(4) Continuous Copy

Max. multiple number	999 pages

(5) Copy Ratio

Copy ratio	AB series : 25%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 400% Inch series : 25%, 64%, 77%, 100%, 121%, 129%, 400%
Zoom	25 - 400% 25 - 200% (Copy from DSPF)
Independent scaling	Not provided

(6) Exposure/Copy Quality Process

Exposure mode	Binary: Text(auto/manual), Text/photo, Photo 256 levels: Not provided
Manual steps	9 steps
Smoothing	Standard
Toner save mode	Standard

(7) Copy Function

Function	APS	Standard Function
	AMS	Standard Function
	Paper type select	Standard Function (By type setting)
	Auto tray switching	Standard Function
	Rotation copy	Standard Function
	Electronic sort	Standard Function
	Rotation sort	Not provided
	Reserved copy	Standard Function
	Prior tray setting	Not provided
	Recall/register of program	Standard Function
	Proof copy	Not provided
	Preheat function	Standard Function (To be set up by key operator)
	Auto power shut-off function	Standard Function (To be set up by the key operator program)
	Account control	Standard Function (100 accounts)
	Communication support (RIC)	Standard Function
	Card counter support	Only provided the connector
	Coin vendor support	Only provided the connector
Special function	Margin shift	Standard Function
	Edge erase / Center erase	Standard Function
	Dual page copying	Standard Function
	Covers	Not provided
	Transparency insert	Not provided
	Centering	Not provided
	Multi shot (N in 1)	Standard Function (2 in 1 / 4 in 1)
	Pamphlet copy	Standard Function
	2-sided copy orientation change	Standard Function
	Large capacity original mode	0 (Max. 140 pages)
	B/W reverse	Not provided
	Shading	Not provided
	Mirror image	Not provided
	Repeat	Not provided
	Date stamp	Not provided
	Stamp	Not provided
	Page stamp	Not provided
	Zaurus print	Not provided

[5] CONSUMABLE PARTS

1.Supply system table

Note: The consumable parts are the same as those of the AR-M350/M450 and the AR-P350/P450.

A.USA

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450NT (*1 AR-450NT-J)	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450ND	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K maintenance kit	Cleaner blade	x1	50K	AR-450KC1	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K maintenance kit	Transfer roller	x1	100K	AR-450KA1	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	Upper heat roller kit	Upper heat roller	x1	200K	AR-450UH	
		Fusing separation pawl (Upper)	x4			
7	Lower heat roller kit	Lower heat roller	x1	200K	AR-450LH	
		Fusing separation pawl (Lower)	x2			
8	Cleaner blade	Cleaner blade	x10	50K(x10)	AR-450CB	AR-450CB=(AR-450BL)x10
9	Cleaning roller	Cleaning roller	x10	200K(x10)	AR-450CR	AR-450CR=(AR-450RC)x10
		Bearing	x20			
10	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
11	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

*1: For USA Government

Note1: Print on Master/individual carton:Toner/Developer in 2 languages (English/French), DR in 4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

B.Europe

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450T	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450DV	
3	Drum	Drum	x1	50K	AR-450DM	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

2.Production number identification

A. Drum cartridge

The lot number, printed on the front side flange, is composed of 10 digits, each digit showing the following content:

1	2	3	4	5	6	7	8	9	10

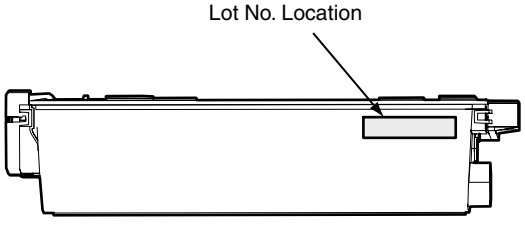
1 Number
For this model, this digit is 2.
2 Alphabet
Indicates the model conformity code. T for this model.
3 Number
Indicates the end digit of the production year.
4 Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.
5/6 Number
Indicates the production day on the month.
7 Number or X, Y, Z
Indicates the month of packing.
X stands for October, Y November, and Z December.
8/9 Number
Indicates the day of the month of packing.
10 Alphabet
Indicates the production factory. "A" for Nara Plant.

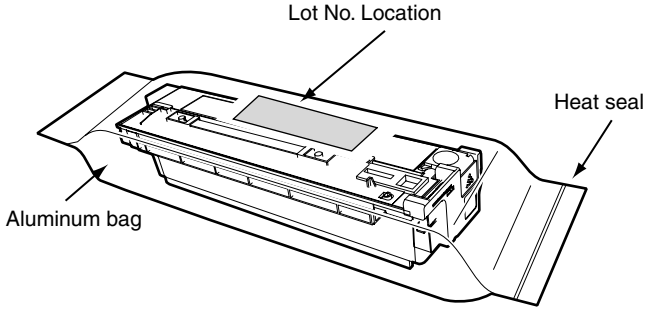
B. Toner cartridge

The lot number is composed of 7 digits, and each digit indicates as following.
The lot number shall is printed in the position shown below.

1	2	3	4	5	6	7

1 Version number (A - sequentially revised)
2 Numeral figure
Indicates the end digit of the production year.
3 Alphabet
Indicates the production factory. (B for SOCC)
4 Destination code
5,6 Numeral figures
Indicates the production day.
7 Numeral figure or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.





C. Developer

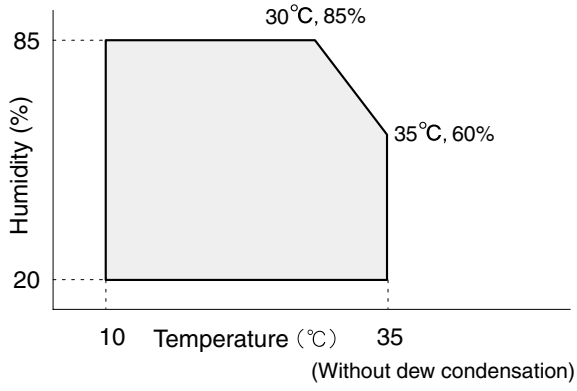
The lot number is composed of 8 digit, and each digit indicates as following.
The lot number shall be printed on the bag.

1	2	3	4	5	6	7	8

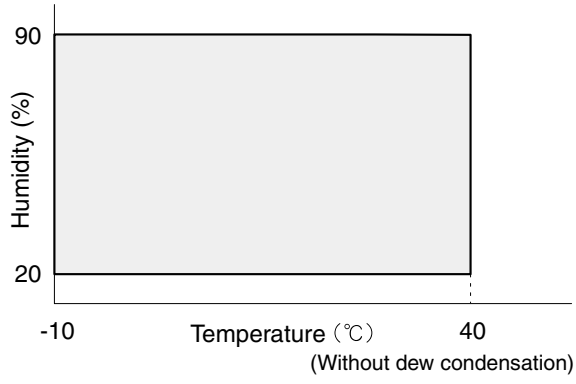
1 Alphabet
Indicates the production factory.
2 Figure
Indicates the production year.
3/4 Figure
Indicates the production month.
5/6 Figure
Indicates the production day.
7 Hyphenation
8 Figure
Indicates the production lot.

3. Environmental conditions

A. Operating conditions



B. Storage conditions

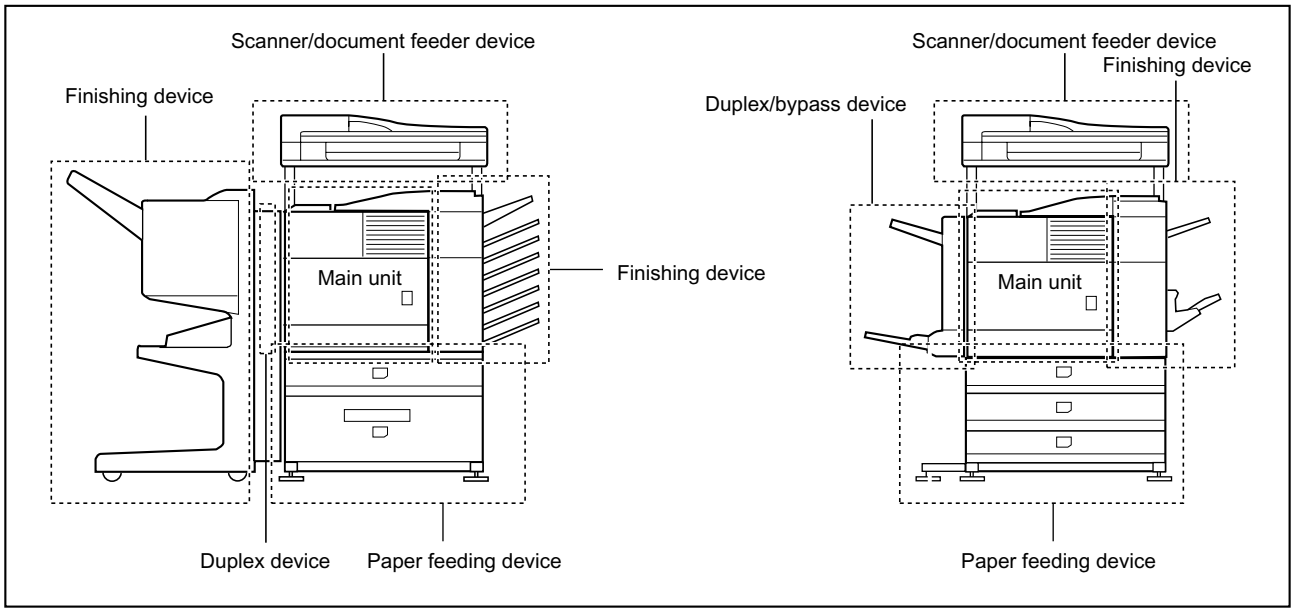


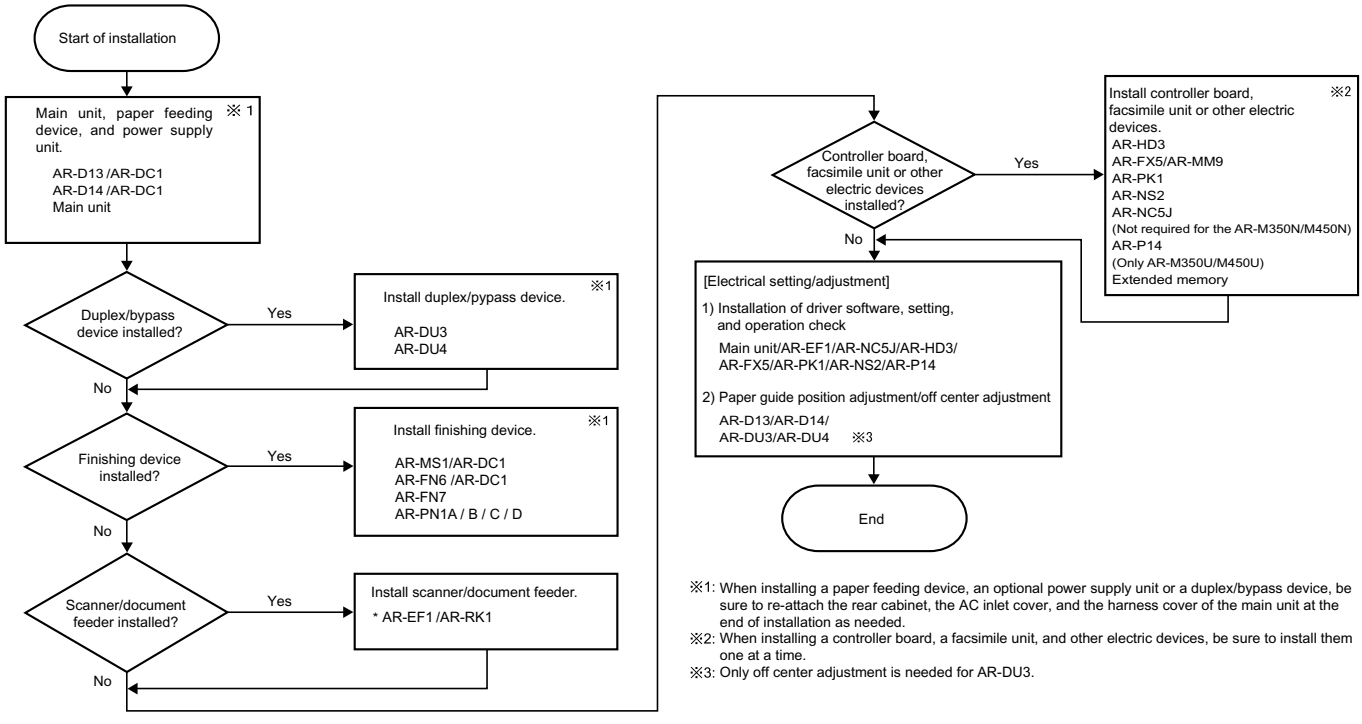
[6] UNPACKING AND INSTALLATION

1. Installing procedure flowchart

There are many combinations between this machine and option units. For installing option units, observe the following procedures for efficiency.

To install the devices efficiently, follow the procedure below.
Some peripheral devices may have been installed as standard devices depending on the main unit model.
Part of descriptions and illustrations may be different.





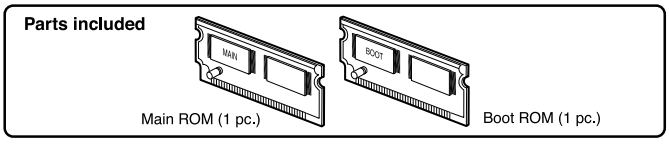
※1: When installing a paper feeding device, an optional power supply unit or a duplex/bypass device, be sure to re-attach the rear cabinet, the AC inlet cover, and the harness cover of the main unit at the end of installation as needed.
※2: When installing a controller board, a facsimile unit, and other electric devices, be sure to install them one at a time.
※3: Only off center adjustment is needed for AR-DU3.

* When installing an option, refer to the Service Manual for that option and or the AR-M350 / M450 Service Manual.

2. AR-P14 installing procedure

<Before installation>

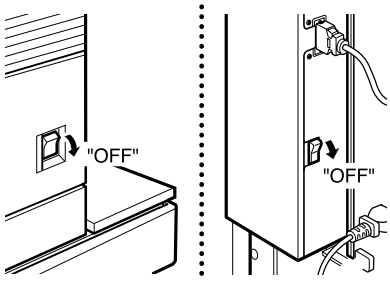
* This installation procedure is provided for use with the AR-M350U/ M450U series.
* To connect this machine to a network, a Print Server Card (NIC) AR-NC5J must be installed to the multi-function controller board in advance.



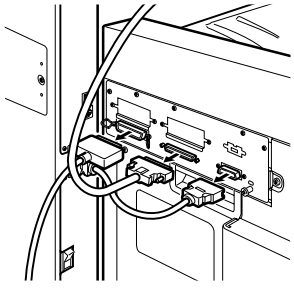
* To enable the printer expansion function, the product key must be acquired.

The application number, machine serial number, and product key number are important information.
Keep the above information for future reference.

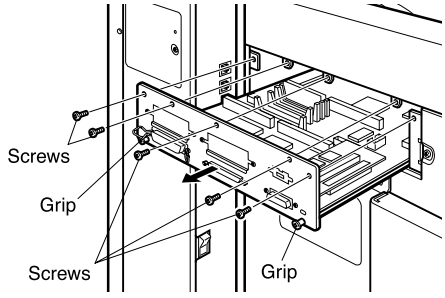
1) Mount the printer expantion kit ROMs to the control PWB.
<1>Turn off the main switch of the main unit of the printer
Turn the main switch located on the front side of the main unit to the "OFF" position.
If the machine is equipped with a facsimile unit, also turn off the FAX power switch.
Then remove the power plug from the outlet.
.



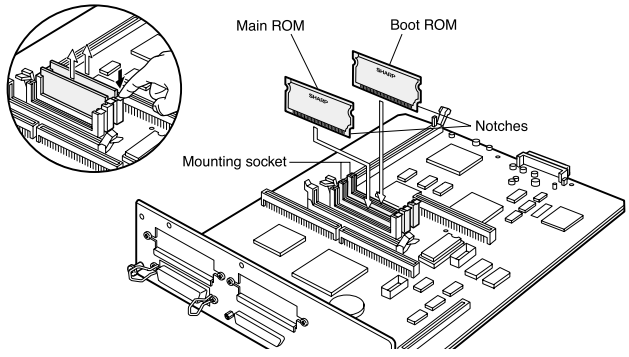
<2>Remove the cables connected to the control PWB unit.
Remove all the cables connected to the control PWB unit of the main unit of the printer.



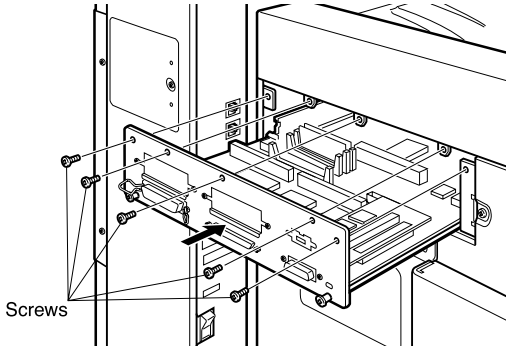
<3>Remove the control PWB unit.
Remove the five screws that fix the control PWB unit to the main unit of the printer.
Then, hold the two grips and pull out the control PWB unit to remove it from the main unit.



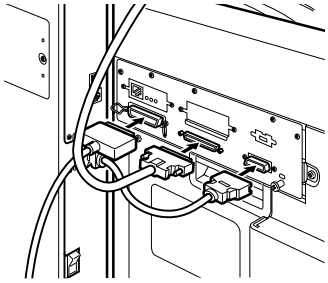
<4>Mount the printer expansion kit ROMs(2 pcs.)to the control PWB.
Remove the ROMs(main and boot ROMs)from the control PWB and replace them with the two ROMs(main and boot ROMs)of the printer expansion kit.
The main and boot ROMs are indicated with "MAIN" and "BOOT" on the labels on the ROMs respectively.
When mounting the printer expansion kit ROMs, insert them to the same positions in the same direction as those before replacement and ensure that the inserted printer expansion kit ROMs are locked with the fittings of the sockets.



<5>Re-attach the control PWB.
Attach the control PWB to the main unit of the printer and fix it using five screws.

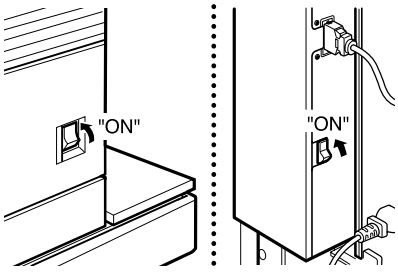


<6>Connect the cables to the control PWB.
Connect all the cables that have been removed in <2> to the original positions of the control PWB unit.



If another peripheral device must be installed, carry out the following steps at the end of the installation work.

2) Turn on the main switch of the main unit of the printer.
Insert the power plug of the main unit of the printer to the outlet.
Then, turn the main switch located on the front side of the main unit to the "ON" position.
If the machine is equipped with a facsimile unit, turn on the FAX power switch.



3) Prepare to enable the printer expansion function.
To enable the printer expansion function, use the keys on the operation panel to enter the product key.
For entry of the product key, see the key operator's guide of the operation manual for the main unit.

Carry out the network setting for the Print Server Card.
Use a key operator program to carry out the network setting for this machine. For this network setting, the customer's network environment must be checked. Consult the network administrator to carry out the setting.

In addition to the network setting for this machine, to use the machine in the network environment:
According to the customer's network environment, install the driver software from the CD-ROM supplied with this machine and use the utility software supplied with the Print Server Card to set the network printer for the server computer.
For installation in the server computer and network setting, see the operation manual supplied with the main unit.
This setting must be carried out by the network administrator or based on consultation with the network administrator.

4) To check the operation of the printer expansion function.
When the network settings and the driver settings are complete, perform a test print to check if printing can be performed successfully.
(When test printing is completed successfully, use the "list print" key operator program to print the network settings and keep the printout for future reference.)

Installation of AR-P14 is now complete.

[7] MAINTENANCE

1. Self print of set values

Use SIM 22-6 to print the set values (machine settings) and jam history.
These values must be printed before execution of maintenance or disassembly procedures.

2. Maintenance System Table

The maintenance system table is the same as that of the AR-M350/M450.

A. Scanner / DSPF

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Unit name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Optical section	Mirror/Lens/Reflector/Sensors		○	○	○	○	○	○	○	○	○	
	Table glass/OC		○	○	○	○	○	○	○	○	○	
	White reference glass		○	○	○	○	○	○	○	○	○	
	Rails			☆	☆	☆	☆	☆	☆	☆	☆	
	Drive belt/Drive wire/Pulley			×	×	×	×	×	×	×	×	
DSPF	Paper feed section	Take-up roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Separation pad	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Paper feed roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
	Transport section	PS roller	○	○	○	○	○	○	○	○	○	
		Exposure section (Dust-proof glass)	○	○	○	○	○	○	○	○	○	
	Paper exit section	Paper feed roller SPF	○	○	○	○	○	○	○	○	○	
	Other	Sensors			○		○		○		○	For cleaning, blow air.
	Finish stamp section [Option] (Japan only)	Stamp solenoid									▲	
		Stamp individual part	×	×	×	×	×	×	×	×	×	User replacement at 10K or 1 year.

Note 2: Replacement reference: Same as above or 2 years.

B. Engine section

* For disassembly procedures, refer to the AR-P350/P450 Service Manual.

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Unit name	Part name	When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Drum peripheral	Drum		▲	▲	▲	▲	▲	▲	▲	▲	Installed when shipping
	Cleaner blade		▲	▲	▲	▲	▲	▲	▲	▲	
	Toner reception seal		▲	▲	▲	▲	▲	▲	▲	▲	
	Side molt		▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer roller	×	×	▲	×	▲	×	▲	×	▲	
	Discharge plate	×	×	▲	×	▲	×	▲	×	▲	
	TR bearing (F/R)			×		×		×		▲	
	Transfer roller collar			×		×		×		▲	
	After-transfer star ring			×		×		×		×	
	TR gear	×	×	×	×	▲	×	×	×	▲	
	Screen grid	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum separation pawl UN		▲	▲	▲	▲	▲	▲	▲	▲	
	Charger case (M/C)		○	○	○	○	○	○	○	○	
	Charging plate (saw teeth)	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
Developing section	Developer		×	▲	×	▲	×	▲	×	▲	Supplied when installing
	DV blade		×	▲	×	▲	×	▲	×	▲	
	DSD collar		○	○	○	○	○	○	○	○	
	DV side seal F		×	▲	×	▲	×	▲	×	▲	
	DV side seal R		×	▲	×	▲	×	▲	×	▲	
	Toner cartridge										Attached when installing./ EX Japan: 814g, user replacement for every 27K.
Fusing section	Upper heat roller		○	○	○	▲	○	○	○	▲	
	Lower heat roller		○	○	○	▲	○	○	○	▲	
	Upper separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Lower separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Thermistor		○	×	○	×	○	×	○	×	Clean and remove paper dust.
	Upper heat roller gear		×	×	×	▲	×	×	×	▲	
	Paper guides	○	○	○	○	○	○	○	○	○	
	Gears		☆	☆	☆	☆	☆	☆	☆	☆	
	Cleaning roller		×	×	×	▲	×	×	×	▲	
	CL roller collar					▲				▲	
Filters	Ozone filter			▲		▲		▲		▲	
Paper feed section	Paper feed roller	○	○	×	○	×	○	×	○	×	Note 1
	Torque limiter	×		×		×		×		×	Note 1
Transport section Paper exit reverse section	PS follower roller	○	○	○	○	○	○	○	○	○	
	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Paper dust remover		×	▲	×	▲	×	▲	×	▲	
Drive section	Specified position	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Belts							×			
Image quality		×	×	×	×	×	×	×	×	×	
Other	Sensors			×		×		×		×	

Note 1:Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Torque limiter section: 80K or 2 years

C. Peripheral devices

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Option name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
ADU + Manual feed	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Separation pad	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport rollers	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Desk (Multi stage LCC) Multi purpose	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport roller	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Finisher	Transport section	Transport rollers	○		○		○		○		○	
		De-curler roller	(○) ×	×	○	×	○	×	○	×	○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple un											Replace UN at 100K staple.
	Staple cartridge											User replacement for every 3000pcs.
Mail-bin stacker	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
Saddle finisher	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple UN											Replace UN at 100K staple (including the staple UN and the holder section).
	Staple cartridge											User replacement for every 5000 pcs.

Note 3: Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Separation pad/Torque limiter section: 80K or 2 years

[8] SIMULATION

For the simulation, the following items have been changed.

22-10

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the system configuration (option, internal hardware).
Section	
Item	Spec
Operation/Procedure	The machine composition below is displayed.

```
SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE: *******
SPF: *******  XXXXXXXXXXX
FINISHER : *******          MAIL BIN : *******          PUNCH : ******
DESK/LCC : *******          ADU: *******  XXXXXXXXXXXX
PROCESS TYPE : *
SYSTEM MEMORY: **MB                 HDD: ***MB  ICU F ******
NIC : *******  NSCN : ******         PS3 : ******
FAX: *******  FAX  MEMORY : **MB     HAND SET: *******
STAMP : *******
```

<List of display value>

MACHINE	Model codes
SPF	NONE/ (Model code)
FINISHER	NONE/ (Model code)
MAIL BIN	NONE/ (Model code)
PUNCH	NONE/ (Model code)
DESK/LCC	NONE/ (Model code)
ADU	NONE/ (Model code)
PROCESS TYPE	Process control spec (1, 2: AR machine 3: DM machine)
SYSTEM MEMORY	Memory capacity (MB)
HDD	Hard disk capacity (MB)
ICU	PRINTER/MFP
NIC	NONE/ (Model code)
NSCN	NONE/ (Network scanner)
PS3	NONE/ (PS3 expansion kit)
FAX	NONE/ (Model code)
FAX MEMORY	FAX expansion memory capacity (MB)
HAND SET	NONE/ (Model code)
STAMP	Finisher stamp NONE/ (Model code)

<List of machine model codes>

Item	Display	Content
MACHINE	AR-P350/350LP	
	AR-P450/450LP	
	AR-M350/350M	(Include the N model)
	AR-M450/450M	(Include the N model)
	AR-310M	
	AR-M350U	
	AR-M450U	
	AR-310S/310F	
	AR-350S/350F	
	AR-450S/450F	
SPF	-	Document feed unit not installed
	AR-EF2	Document feed unit (SPF) installed
	AR-EF1	Duplex document feed unit installed
FINISHER	-	After-work unit not installed
	AR-FN6	Built-in finisher installed
	AR-FN7	Console finisher installed
MAIL BIN	-	Mail bin not installed
	AR-MS1	Mail bin installed
Punch unit	-	Punch unit not installed
	AR-PN1A	Punch unit 2 holes
	AR-PN1B	Punch unit 3 holes
	AR-PN1C	Punch unit 4 holes
	AR-PN1D	Punch unit 4 holes wide hole
ADU	-	Duplex module not installed
	AR-DU3	Duplex module installed
	AR-DU4	Duplex module + manual feed unit installed
DESK	-	Paper feed desk not installed
	AR-MU1	Multi-purpose tray installed
	AR-D14/D15	Paper feed desk installed
	AR-D13	Tandem desk installed
ICU	PRINTER	Printer board
	AR-M11	MFP board
	AR-M12 *	MFP board (U model)
	AR-M13 *	MFP board (S model)
MEMORY	0MB	No expansion memory
	***MB	Expansion memory ***MB
HD	0MB	Hard disk not installed
	****MB	Hard disk installed (AR-HD3)
NIC	-	NIC not installed
	AR-NC5J	NIC installed
PS3 expansion kit	-	PS3 expansion kit not installed
	AR-PK1	PS3 expansion kit installed
FAX	-	FAX expansion kit installed
	AR-FX5	FAX expansion kit not installed
Network scanner	-	Network expansion kit not installed
	AR-NS2F	Network expansion kit installed
Expansion memory	-	Expansion memory for FAX not installed
	AR-MM9	Expansion memory for FAX 8MB (AR-MM9) installed
Handset	-	handset not installed
	AR-HN5	Handset installed
Finish stamp	-	Finish stamp unit not installed
	AR-SU1	Finish stamp unit installed

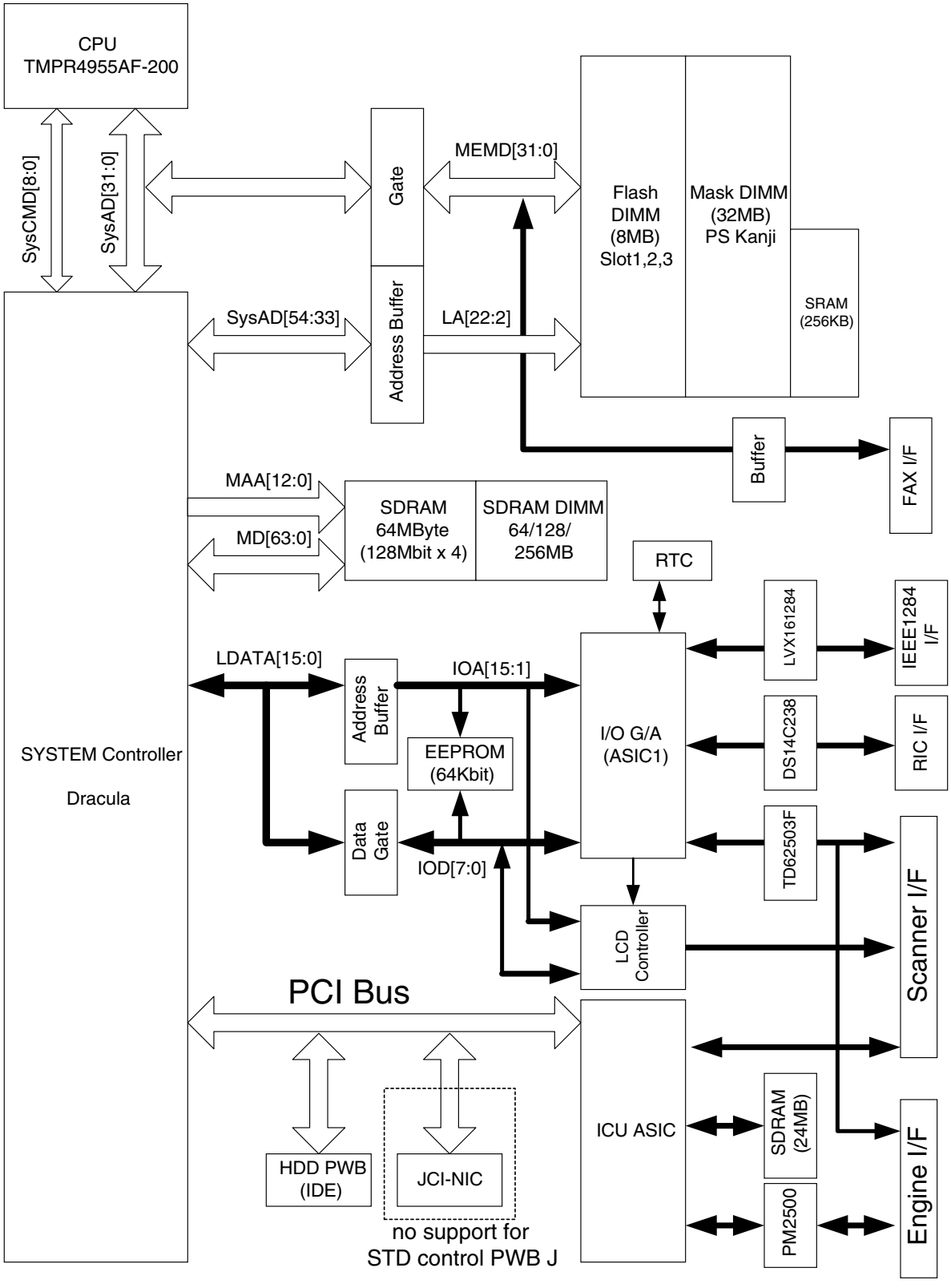
*: Not registered as a product.

[9] CIRCUIT DIAGRAM

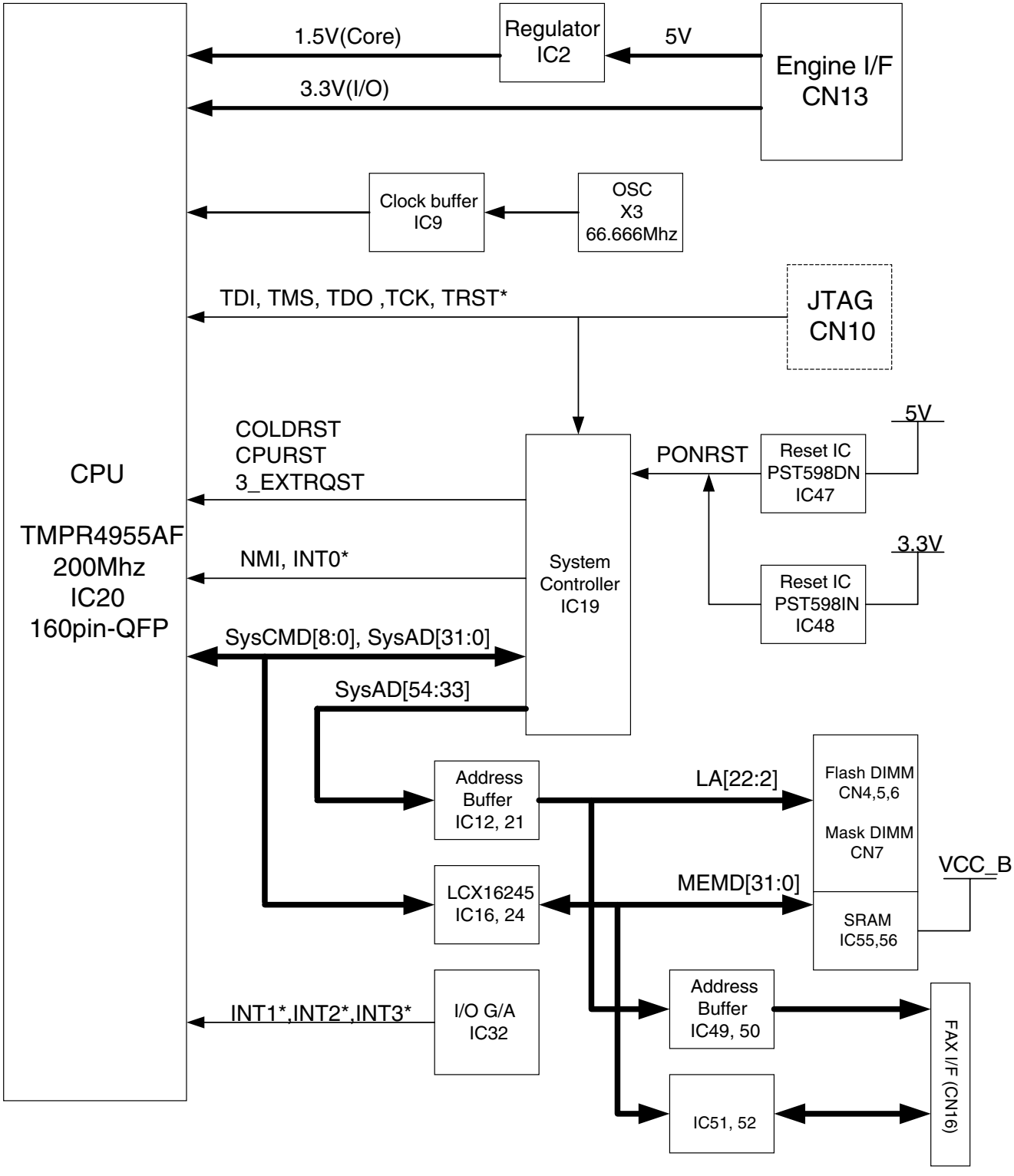
1. MFP Control PWB(for AR-M350U/M450U)

A.Block Diagrams

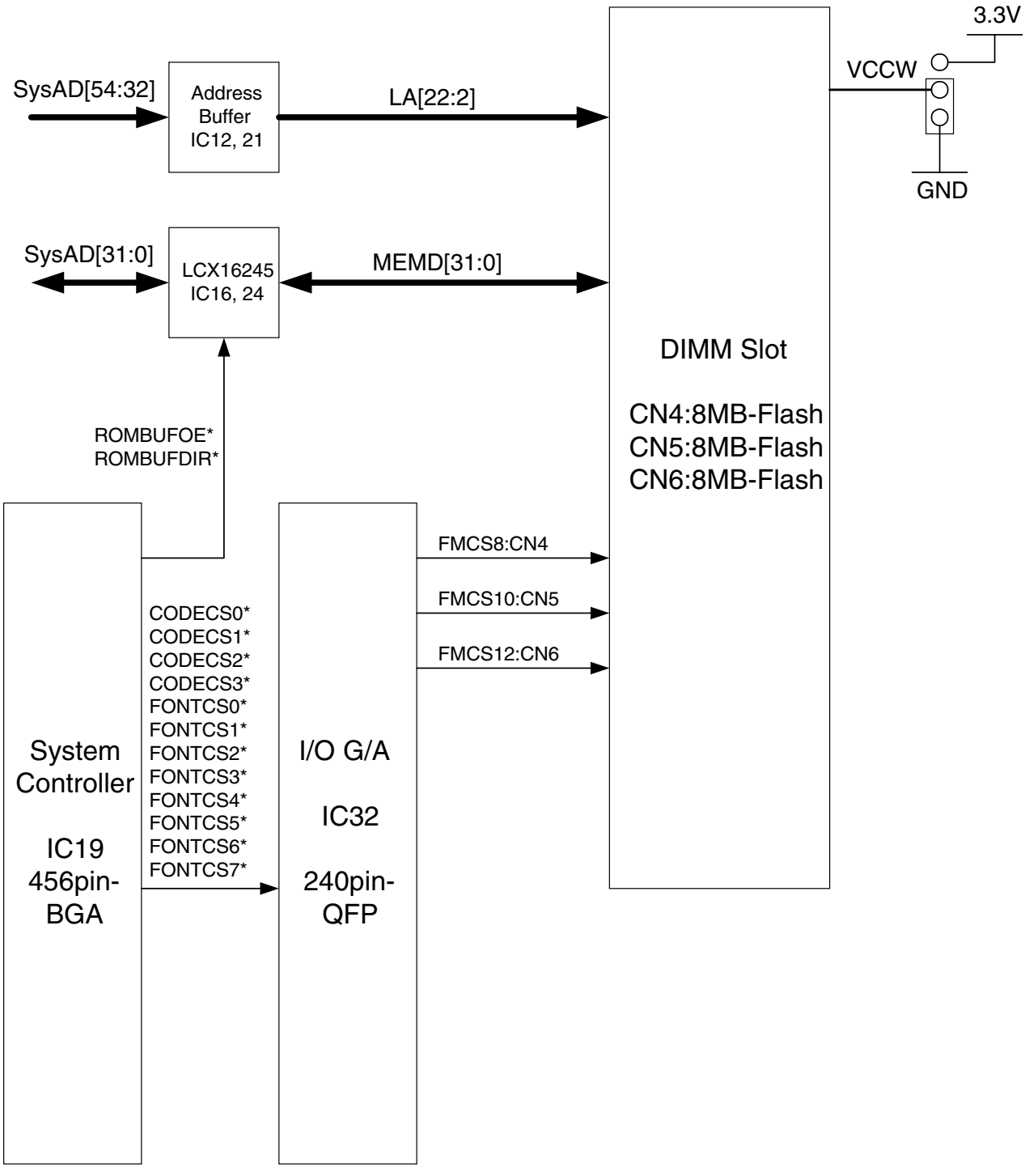
General



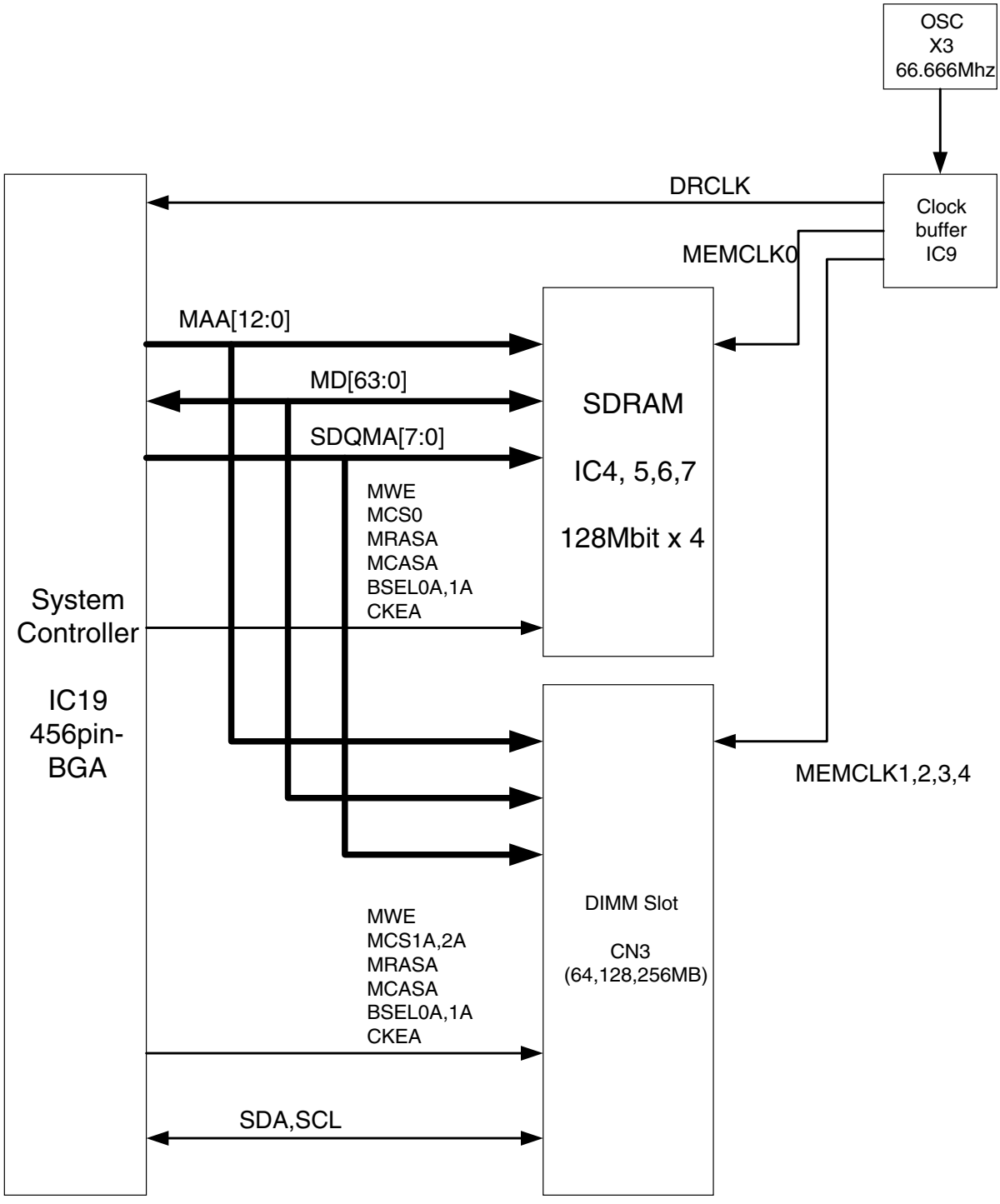
CPU Block


CPU
TMPR4955AF
200Mhz
IC20
160pin-QFP
1.5V(Core)
3.3V(I/O)
Regulator
IC2
5V
Engine I/F
CN13
Clock buffer
IC9
OSC
X3
66.666Mhz
TDI, TMS, TDO ,TCK, TRST*
JTAG
CN10
COLDRST
CPURST
3_EXTRQST
NMI, INT0*
SysCMD[8:0], SysAD[31:0]
SysAD[54:33]
System
Controller
IC19
PONRST
Reset IC
PST598DN
IC47
5V
Reset IC
PST598IN
IC48
3.3V
Address
Buffer
IC12, 21
LA[22:2]
Flash DIMM
CN4,5,6
Mask DIMM
CN7
LCX16245
IC16, 24
MEMD[31:0]
SRAM
IC55,56
VCC_B
INT1*,INT2*,INT3*
I/O G/A
IC32
Address
Buffer
IC49, 50
IC51, 52
FAX I/F (CN16)

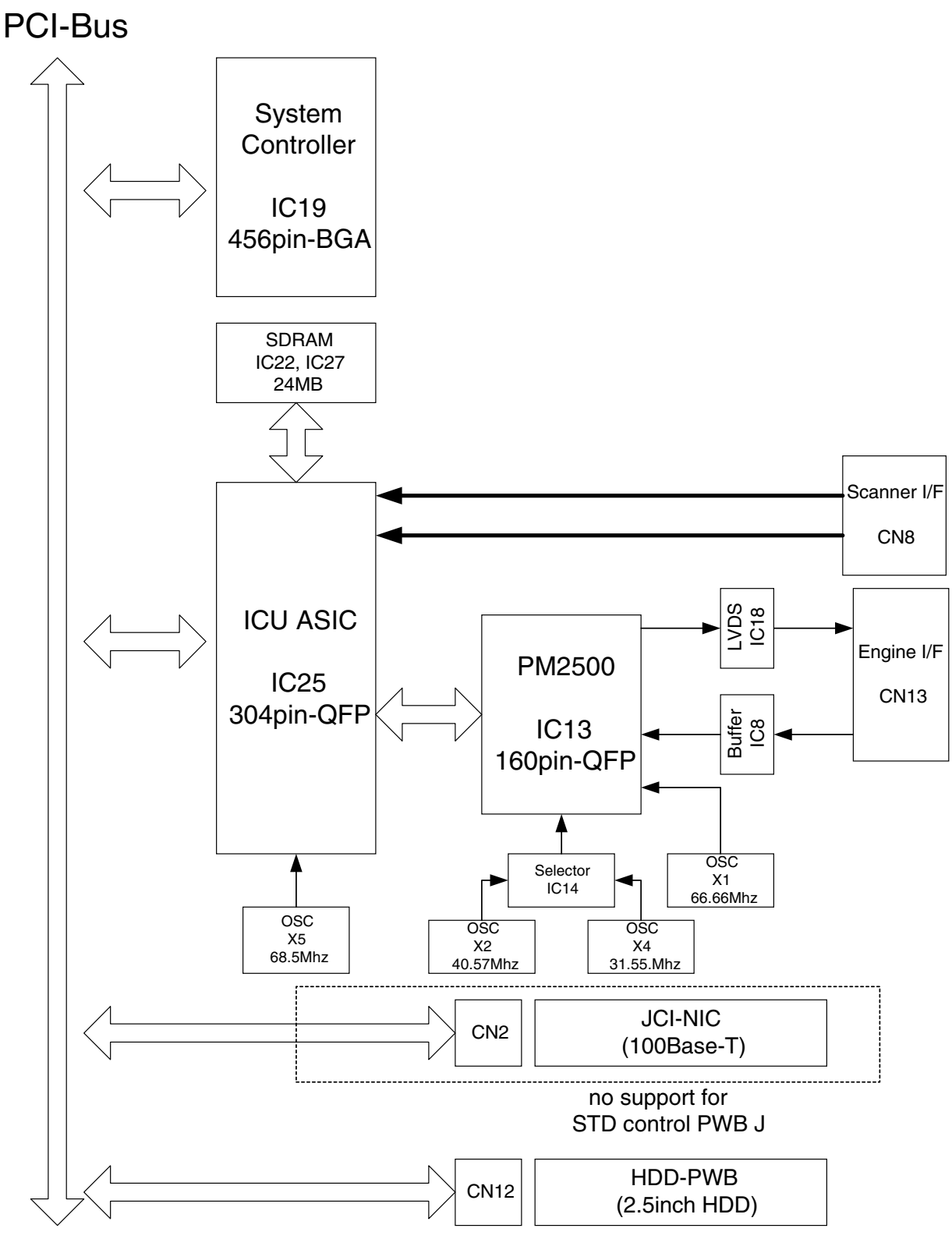
ROM Block (Flash & Mask)



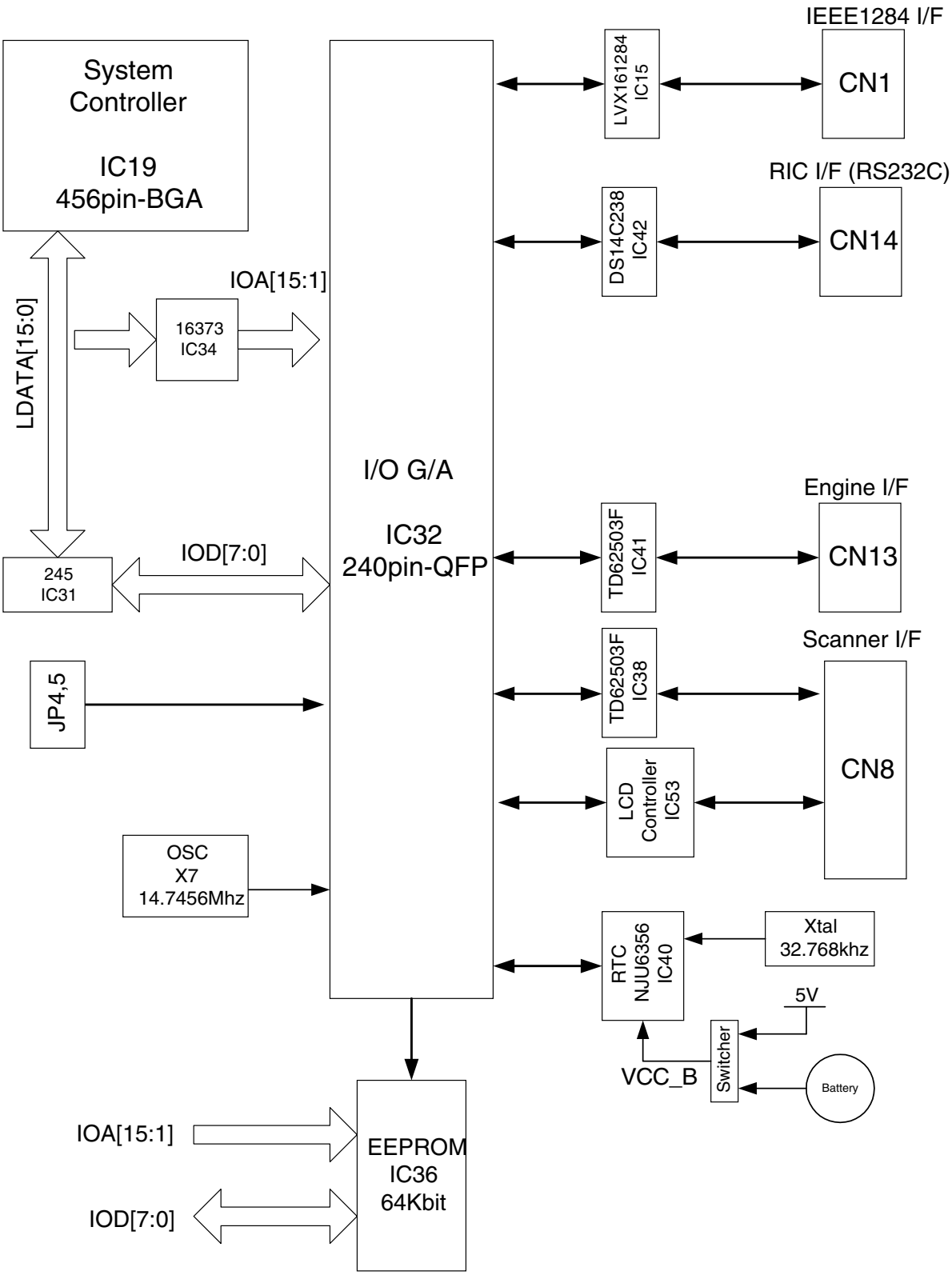
SDRAM Block (Standard & Option)



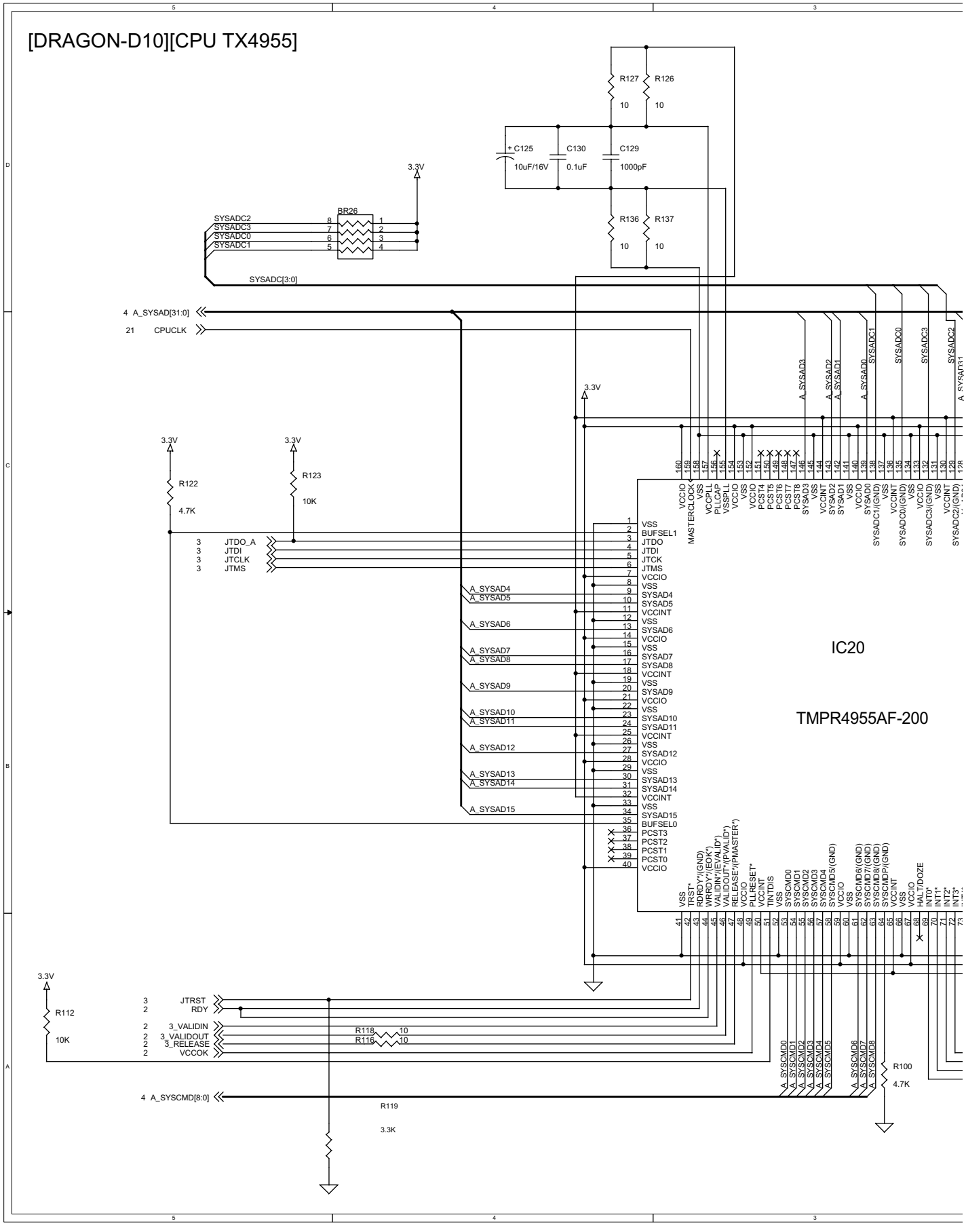
PCI Block (ICU & Option)

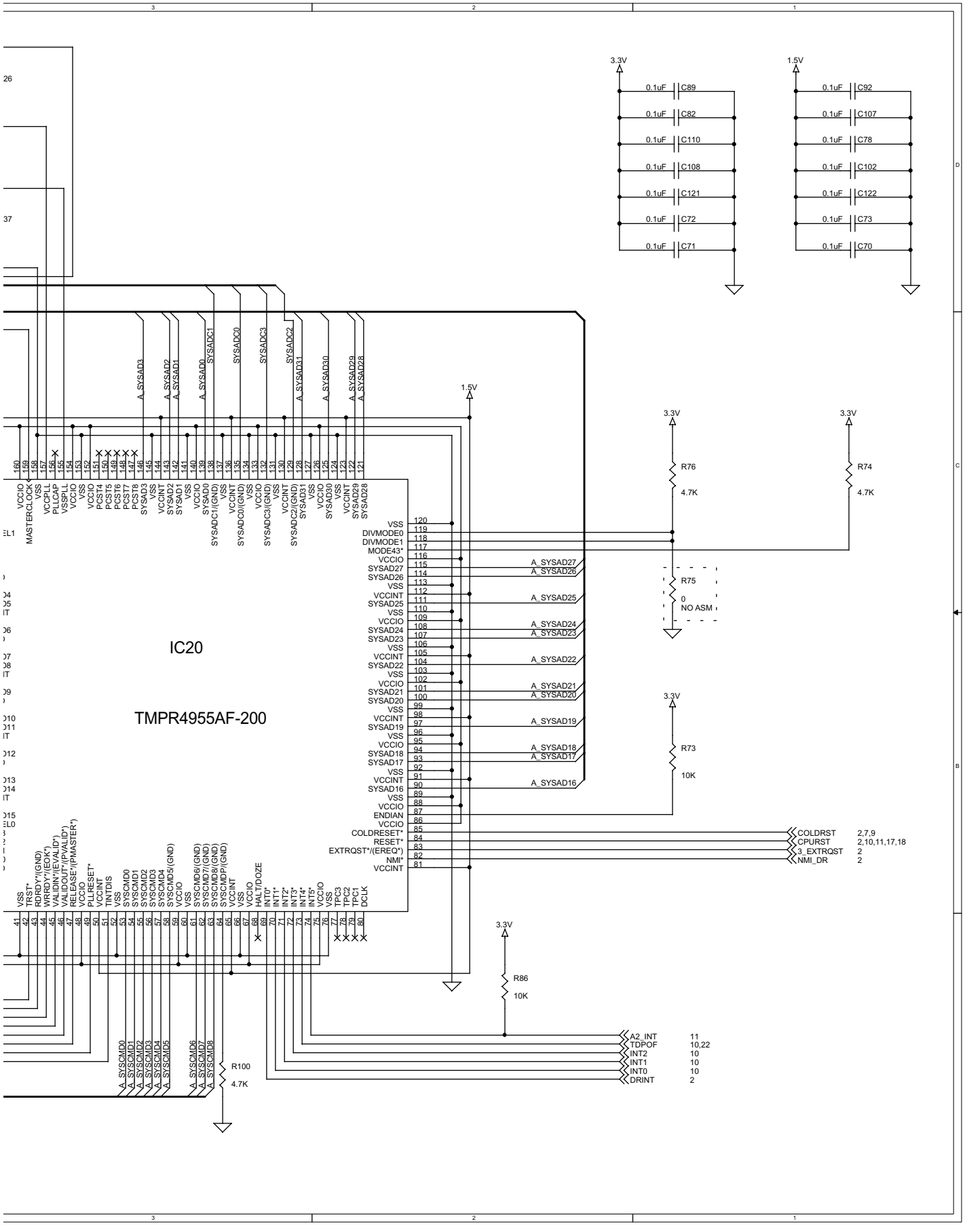


I/O Block (EEPROM & Misc I/O)

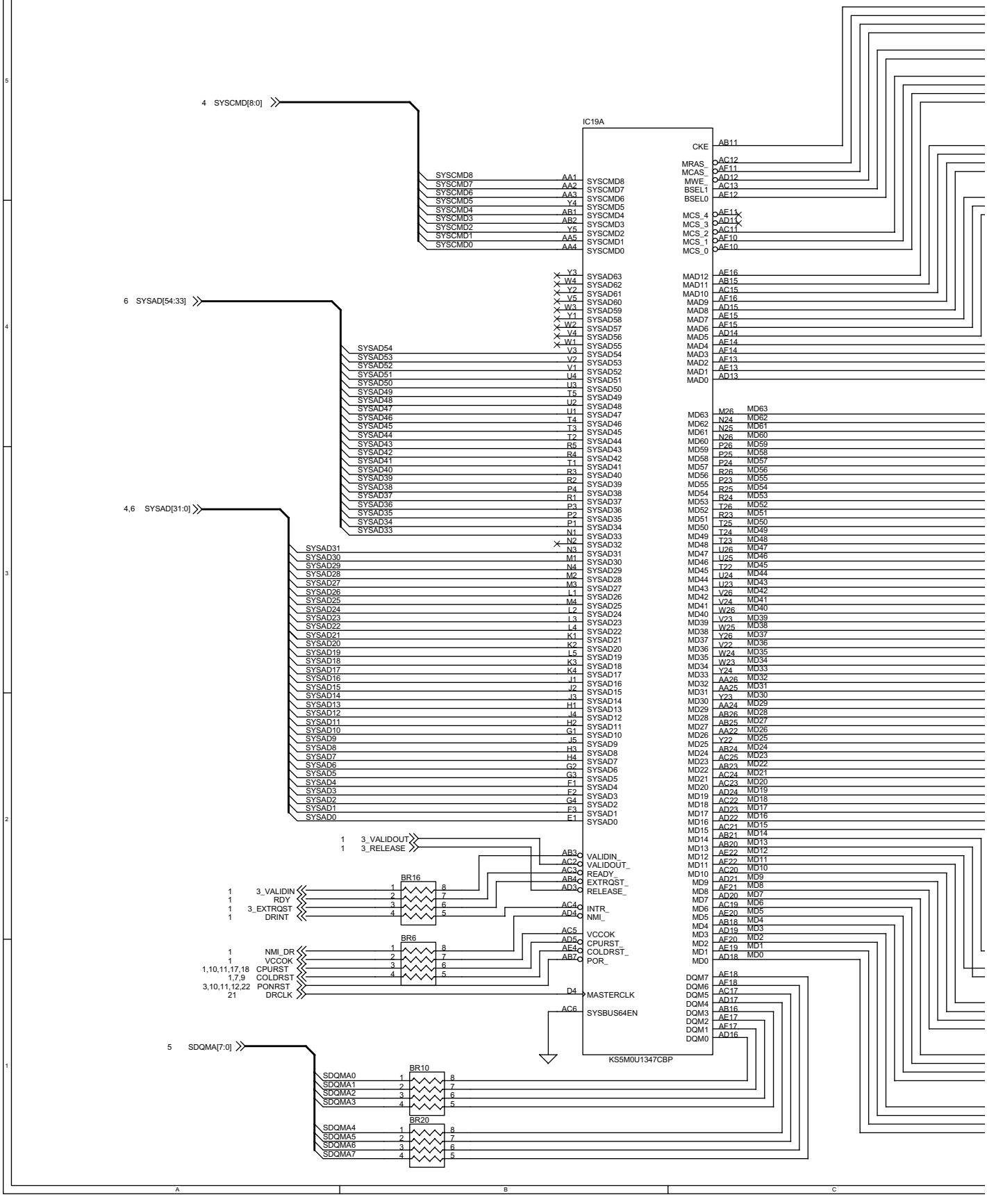


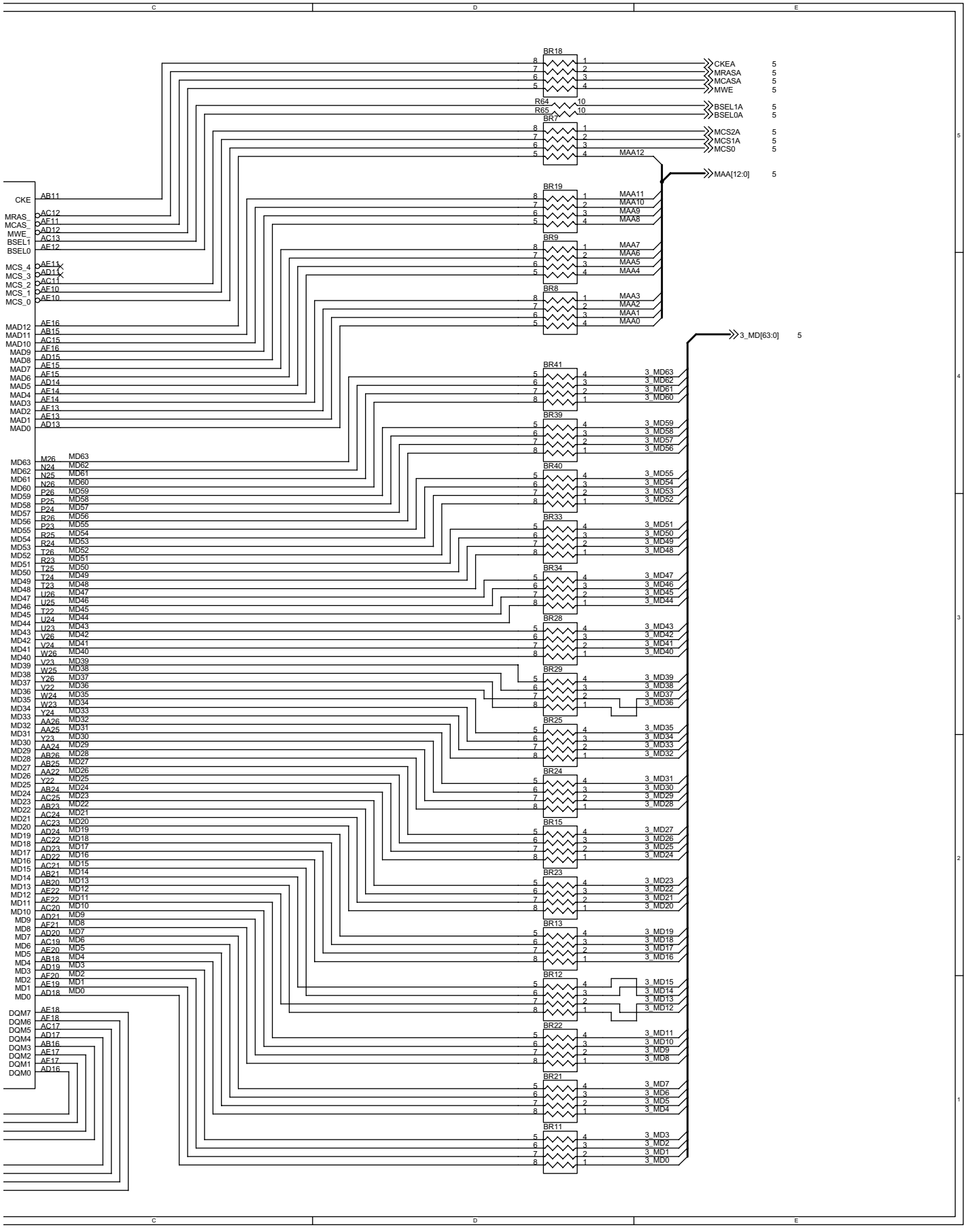
B. Circuit Diagram



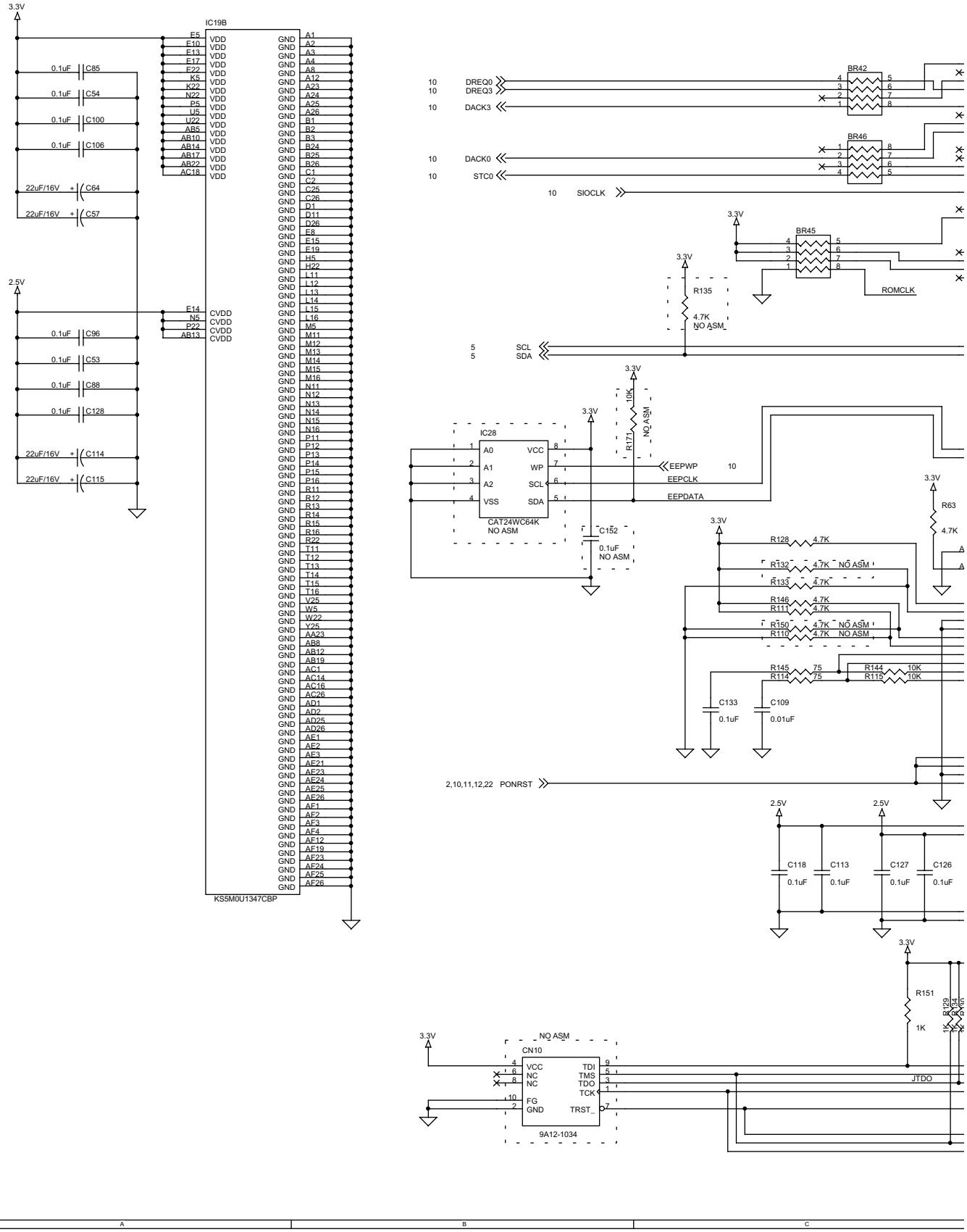

IC20
TMPR4955AF-200
3.3V
1.5V
0.1uF C89
0.1uF C82
0.1uF C110
0.1uF C108
0.1uF C121
0.1uF C72
0.1uF C71
0.1uF C92
0.1uF C107
0.1uF C78
0.1uF C102
0.1uF C122
0.1uF C73
0.1uF C70
R76 4.7K
R74 4.7K
R75 0 NO ASM
R73 10K
R86 10K
R100 4.7K
A_SYSAD27
A_SYSAD26
A_SYSAD25
A_SYSAD24
A_SYSAD23
A_SYSAD22
A_SYSAD21
A_SYSAD20
A_SYSAD19
A_SYSAD18
A_SYSAD17
A_SYSAD16
COLDRST 2,7,9
CPURST 2,10,11,17,18
3_EXTRQST 2
NMI_DR 2
A2_INT 11
TDPOF 10,22
INT2 10
INT1 10
INT0 10
DRINT 2

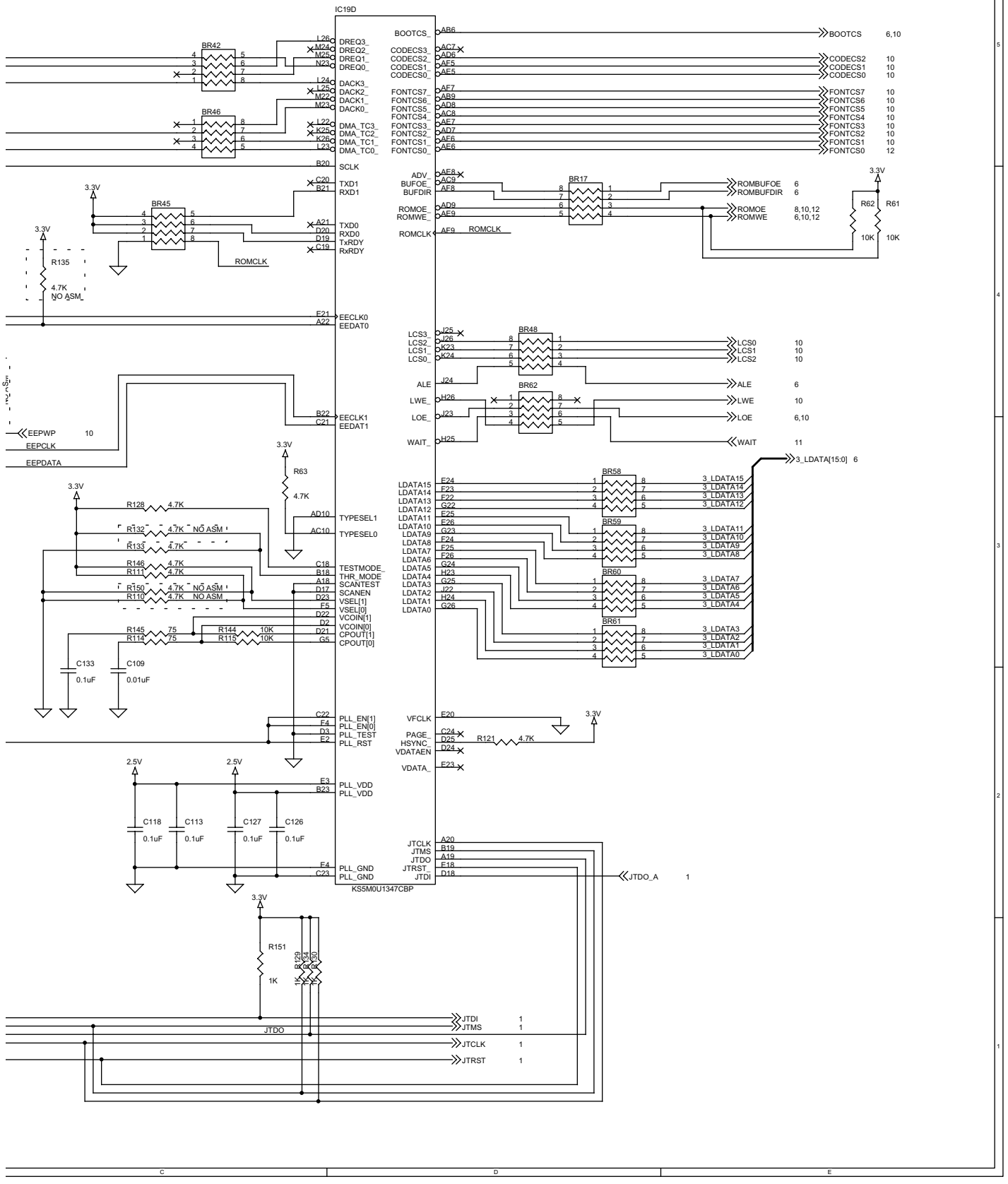
[Print Controller (for AR-M350U / M450U) (1/3)]



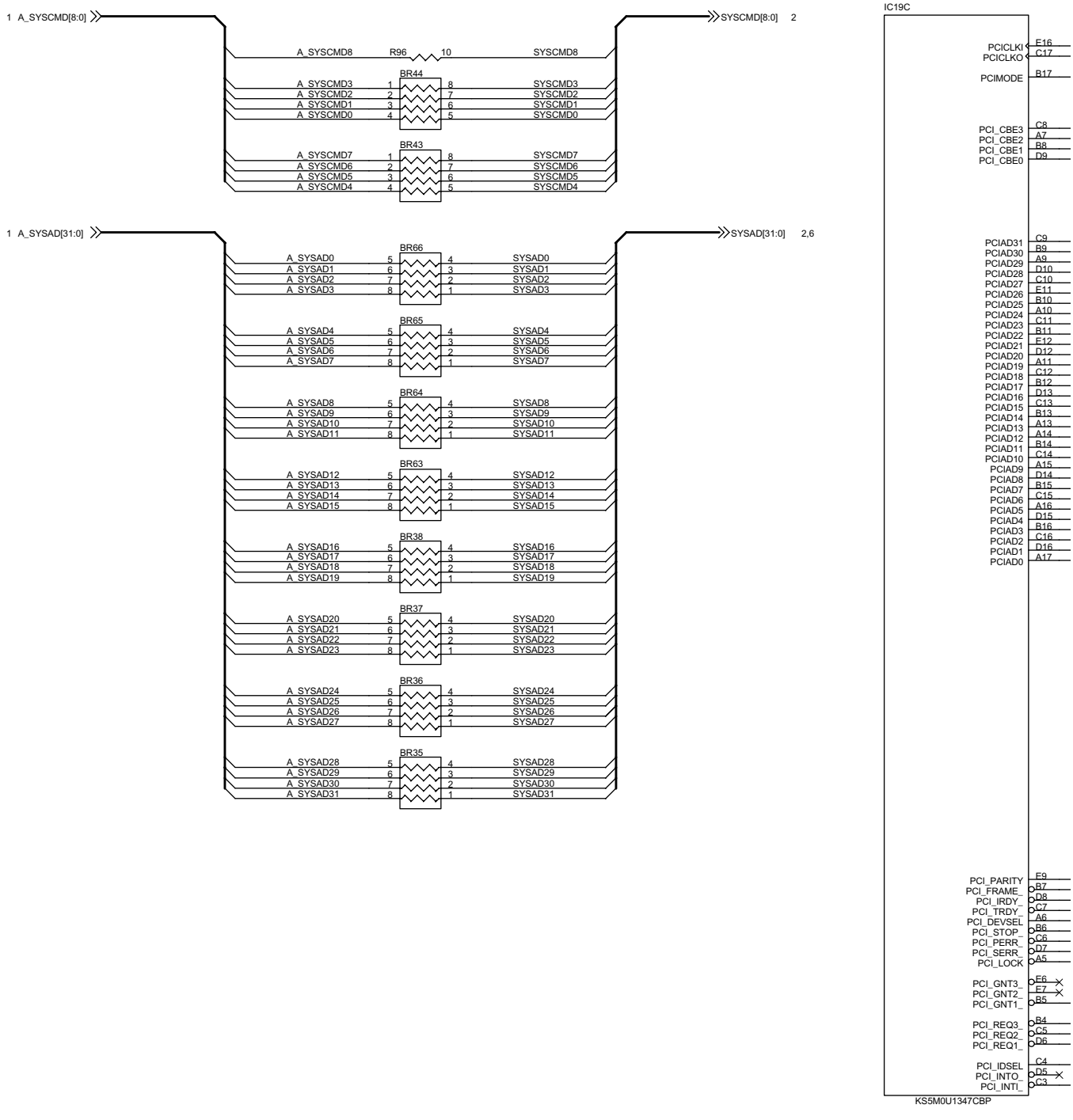

BR18
CKEA 5
MRASA 5
MCASA 5
MWE 5
R64 10
R65 10
BSEL1A 5
BSEL0A 5
BR7
MCS2A 5
MCS1A 5
MCS0 5
MAA12
MAA[12:0] 5
BR19
MAA11
MAA10
MAA9
MAA8
BR9
MAA7
MAA6
MAA5
MAA4
BR8
MAA3
MAA2
MAA1
MAA0
3_MD[63:0] 5
BR41
3_MD63
3_MD62
3_MD61
3_MD60
BR39
3_MD59
3_MD58
3_MD57
3_MD56
BR40
3_MD55
3_MD54
3_MD53
3_MD52
BR33
3_MD51
3_MD50
3_MD49
3_MD48
BR34
3_MD47
3_MD46
3_MD45
3_MD44
BR28
3_MD43
3_MD42
3_MD41
3_MD40
BR29
3_MD39
3_MD38
3_MD37
3_MD36
BR25
3_MD35
3_MD34
3_MD33
3_MD32
BR24
3_MD31
3_MD30
3_MD29
3_MD28
BR15
3_MD27
3_MD26
3_MD25
3_MD24
BR23
3_MD23
3_MD22
3_MD21
3_MD20
BR13
3_MD19
3_MD18
3_MD17
3_MD16
BR12
3_MD15
3_MD14
3_MD13
3_MD12
BR22
3_MD11
3_MD10
3_MD9
3_MD8
BR21
3_MD7
3_MD6
3_MD5
3_MD4
BR11
3_MD3
3_MD2
3_MD1
3_MD0
CKE
MRAS_
MCAS_
MWE_
BSEL1
BSEL0
MCS_4
MCS_3
MCS_2
MCS_1
MCS_0
MAD12
MAD11
MAD10
MAD9
MAD8
MAD7
MAD6
MAD5
MAD4
MAD3
MAD2
MAD1
MAD0
MD63
MD62
MD61
MD60
MD59
MD58
MD57
MD56
MD55
MD54
MD53
MD52
MD51
MD50
MD49
MD48
MD47
MD46
MD45
MD44
MD43
MD42
MD41
MD40
MD39
MD38
MD37
MD36
MD35
MD34
MD33
MD32
MD31
MD30
MD29
MD28
MD27
MD26
MD25
MD24
MD23
MD22
MD21
MD20
MD19
MD18
MD17
MD16
MD15
MD14
MD13
MD12
MD11
MD10
MD9
MD8
MD7
MD6
MD5
MD4
MD3
MD2
MD1
MD0
DQM7
DQM6
DQM5
DQM4
DQM3
DQM2
DQM1
DQM0

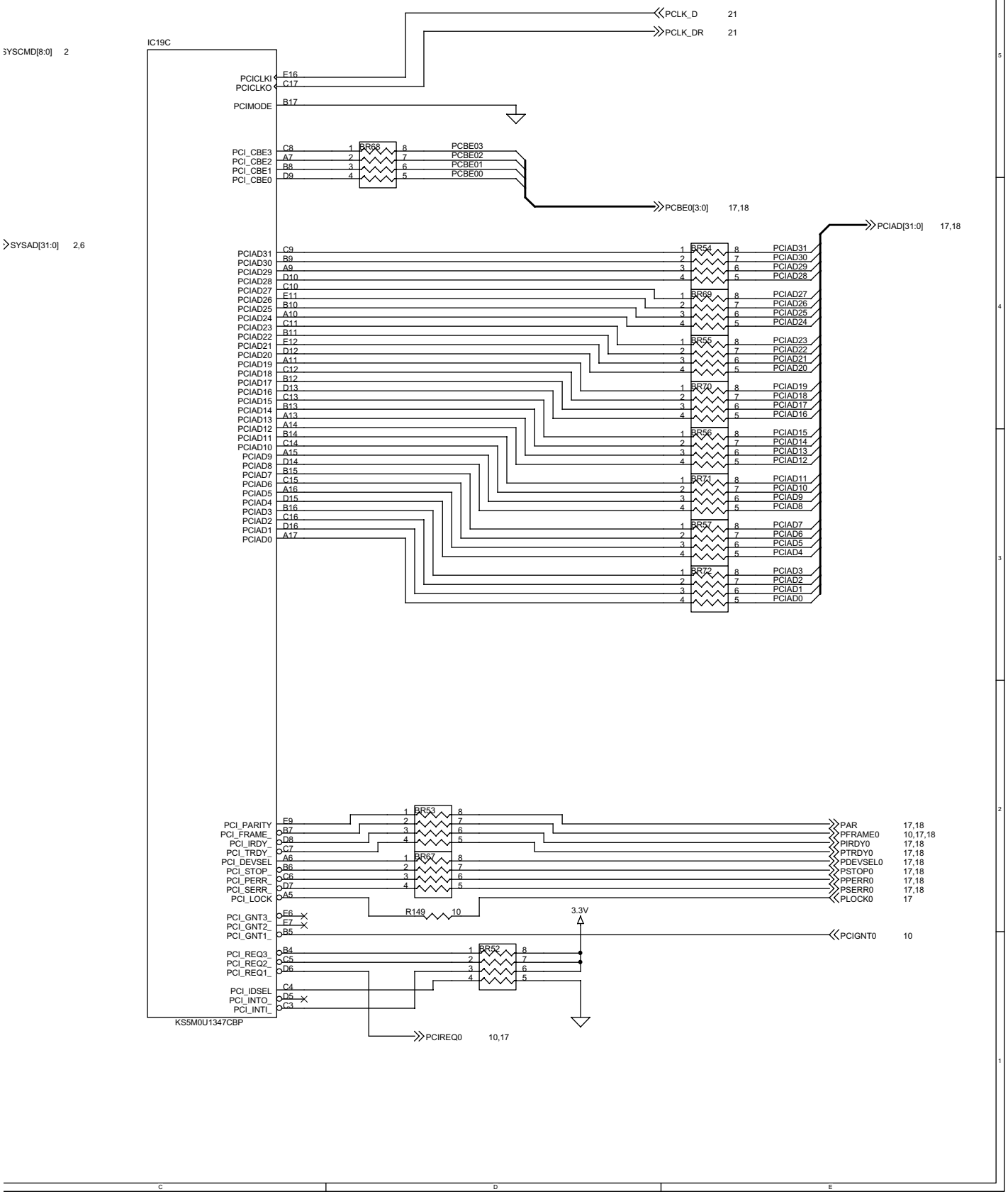
[Print Controller (for AR-M350U / M450U) (2/3)]



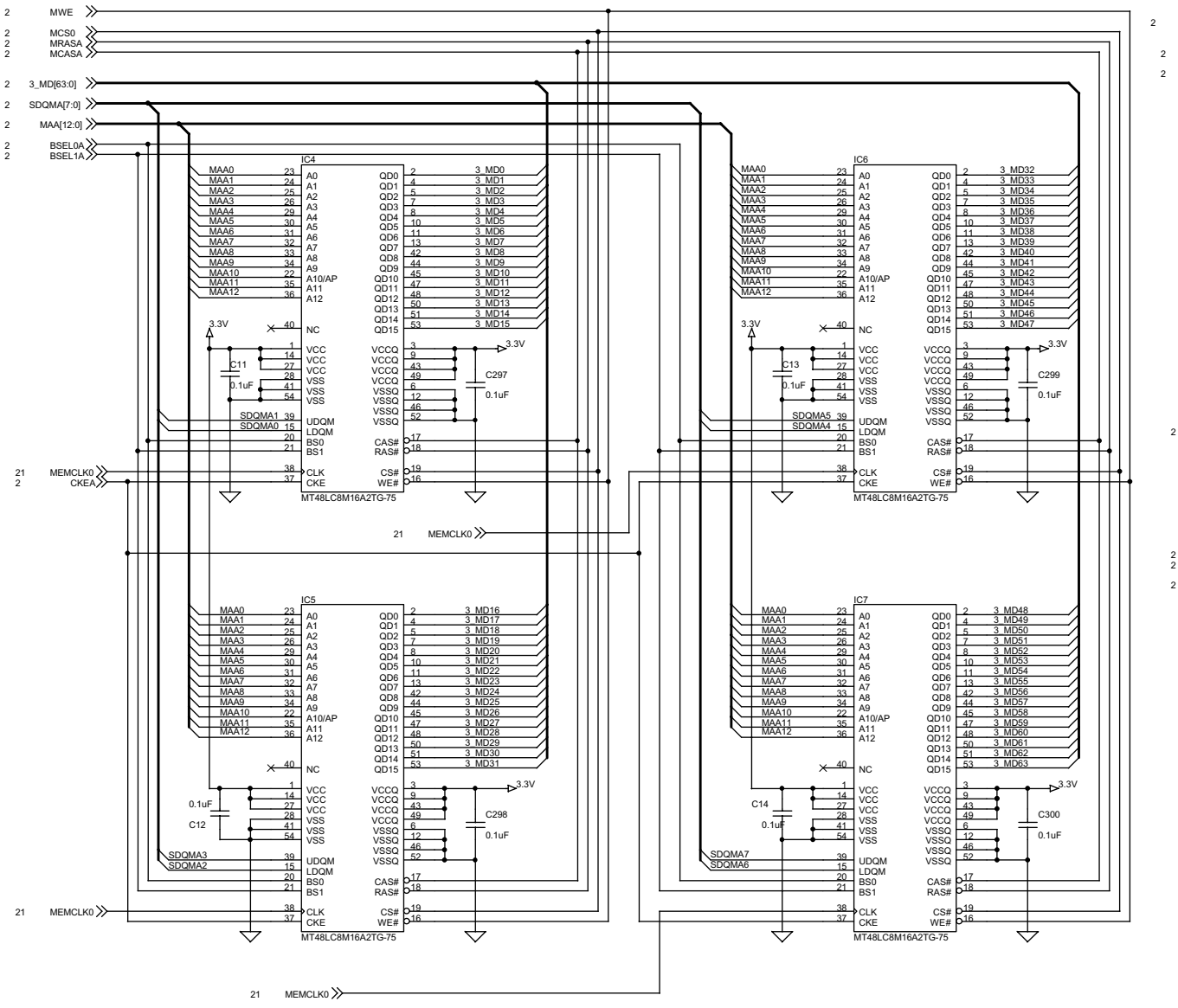

IC19D
KS5M0U1347CBP
BOOTCS_
CODECS3_
CODECS2_
CODECS1_
CODECS0_
FONTCS7_
FONTCS6_
FONTCS5_
FONTCS4_
FONTCS3_
FONTCS2_
FONTCS1_
FONTCS0_
DREQ3_
DREQ2_
DREQ1_
DREQ0_
DACK3_
DACK2_
DACK1_
DACK0_
DMA_TC3_
DMA_TC2_
DMA_TC1_
DMA_TC0_
SCLK
TXD1
RXD1
TXD0
RXD0
TxRDY
RxRDY
EECLK0
EEDAT0
EECLK1
EEDAT1
TYPESEL1
TYPESEL0
TESTMODE_
THR_MODE
SCANTEST
SCANEN
VSEL[1]
VSEL[0]
VCOIN[1]
VCOIN[0]
CPOUT[1]
CPOUT[0]
PLL_EN[1]
PLL_EN[0]
PLL_TEST
PLL_RST
PLL_VDD
PLL_VDD
PLL_GND
PLL_GND
ADV_
BUFOE_
BUFDIR
ROMOE_
ROMWE_
ROMCLK
LCS3_
LCS2_
LCS1_
LCS0_
ALE
LWE_
LOE_
WAIT_
LDATA15
LDATA14
LDATA13
LDATA12
LDATA11
LDATA10
LDATA9
LDATA8
LDATA7
LDATA6
LDATA5
LDATA4
LDATA3
LDATA2
LDATA1
LDATA0
VFCLK
PAGE_
HSYNC_
VDATAEN
VDATA_
JTCLK
JTMS
JTDO
JTRST_
JTDI
BR42
BR46
BR45
BR17
BR48
BR62
BR58
BR59
BR60
BR61
R135
4.7K
NO ASM
R63
R128
R132
R133
R146
R111
R150
R110
R145
R114
R144
R115
10K
R121
C133
0.1uF
C109
0.01uF
C118
C113
C127
C126
R151
1K
R129
R124
R130
R62
R61
2.5V
3.3V
ROMCLK
EEPWP
EEPCLK
EEPDATA
BOOTCS
CODECS2
CODECS1
CODECS0
FONTCS7
FONTCS6
FONTCS5
FONTCS4
FONTCS3
FONTCS2
FONTCS1
FONTCS0
ROMBUFOE
ROMBUFDIR
ROMOE
ROMWE
LCS0
LCS1
LCS2
ALE
LWE
LOE
WAIT
3_LDATA[15:0]
JTDO_A
JTDI
JTMS
JTCLK
JTRST

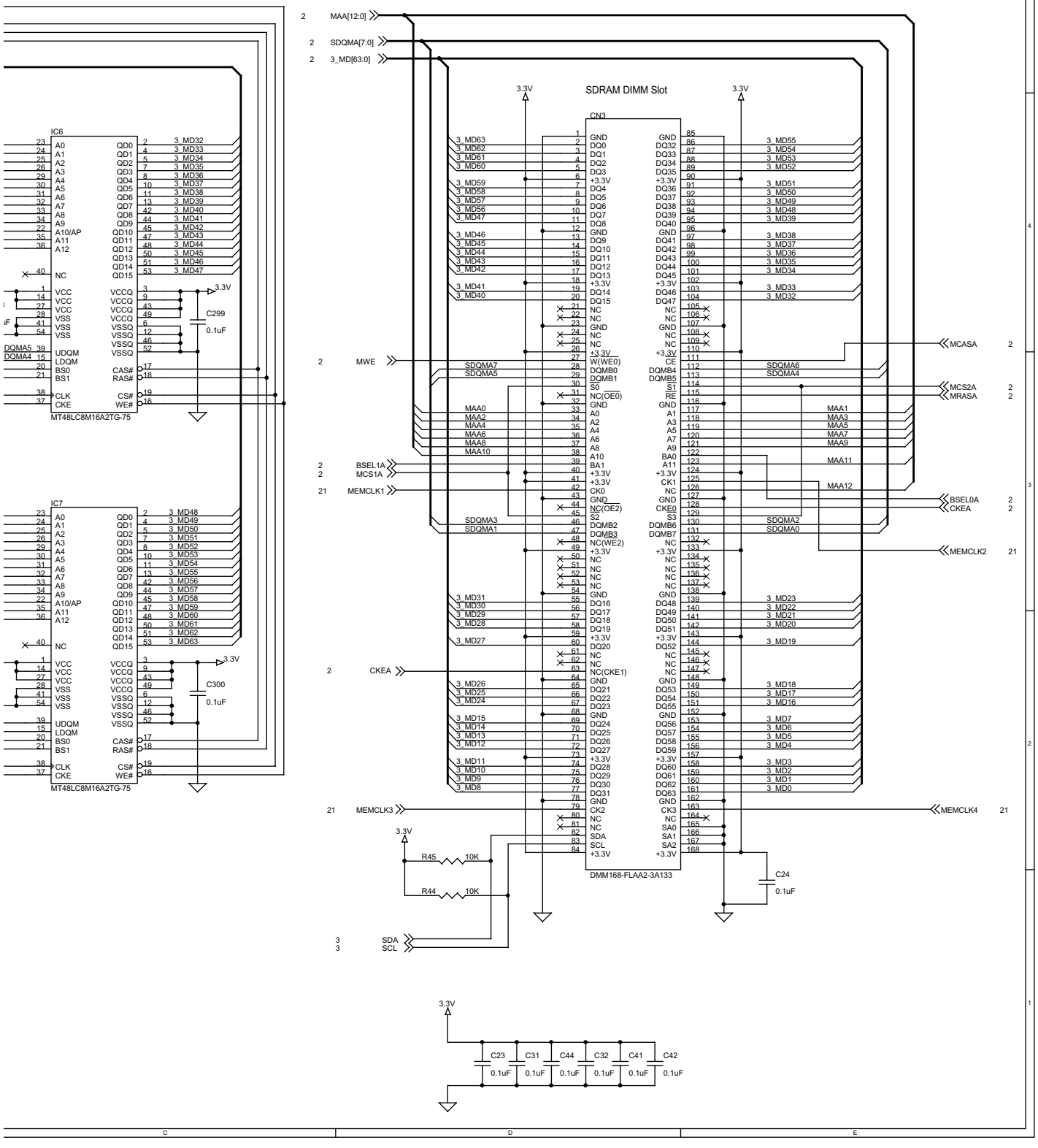
[Print Controller (for AR-M350U / M450U) (3/3)]



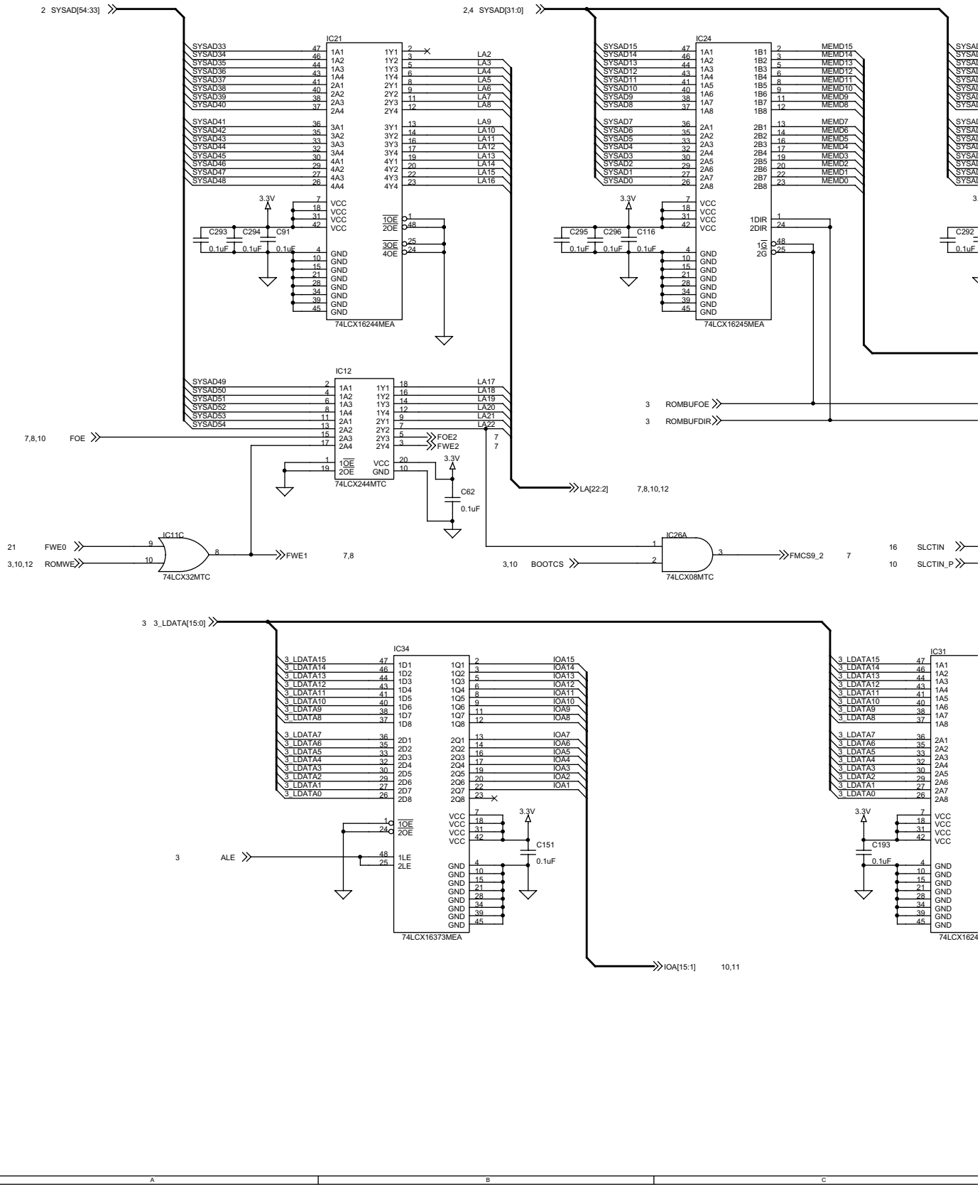

IC19C
SYSCMD[8:0] 2
SYSAD[31:0] 2,6
PCLK_D 21
PCLK_DR 21
PCICLKI E16
PCICLKO C17
PCIMODE B17
PCI_CBE3 C8
PCI_CBE2 A7
PCI_CBE1 B8
PCI_CBE0 D9
BR68
PCBE03
PCBE02
PCBE01
PCBE00
PCBE0[3:0] 17,18
PCIAD[31:0] 17,18
PCIAD31 C9
PCIAD30 B9
PCIAD29 A9
PCIAD28 D10
PCIAD27 C10
PCIAD26 E11
PCIAD25 B10
PCIAD24 A10
PCIAD23 C11
PCIAD22 B11
PCIAD21 E12
PCIAD20 D12
PCIAD19 A11
PCIAD18 C12
PCIAD17 B12
PCIAD16 D13
PCIAD15 C13
PCIAD14 B13
PCIAD13 A13
PCIAD12 A14
PCIAD11 B14
PCIAD10 C14
PCIAD9 A15
PCIAD8 D14
PCIAD7 B15
PCIAD6 C15
PCIAD5 A16
PCIAD4 D15
PCIAD3 B16
PCIAD2 C16
PCIAD1 D16
PCIAD0 A17
BR54
BR69
BR55
BR70
BR56
BR71
BR57
BR72
PCI_PARITY E9
PCI_FRAME_ B7
PCI_IRDY_ D8
PCI_TRDY_ C7
PCI_DEVSEL_ A6
PCI_STOP_ B6
PCI_PERR_ C6
PCI_SERR_ D7
PCI_LOCK A5
BR53
BR67
PAR 17,18
PFRAME0 10,17,18
PIRDY0 17,18
PTRDY0 17,18
PDEVSEL0 17,18
PSTOP0 17,18
PPERR0 17,18
PSERR0 17,18
PLOCK0 17
R149 10
3.3V
PCI_GNT3_ E6
PCI_GNT2_ E7
PCI_GNT1_ B5
PCIGNT0 10
PCI_REQ3_ B4
PCI_REQ2_ C5
PCI_REQ1_ D6
BR52
PCI_IDSEL C4
PCI_INTO_ D5
PCI_INTI_ C3
PCIREQ0 10,17
KS5M0U1347CBP

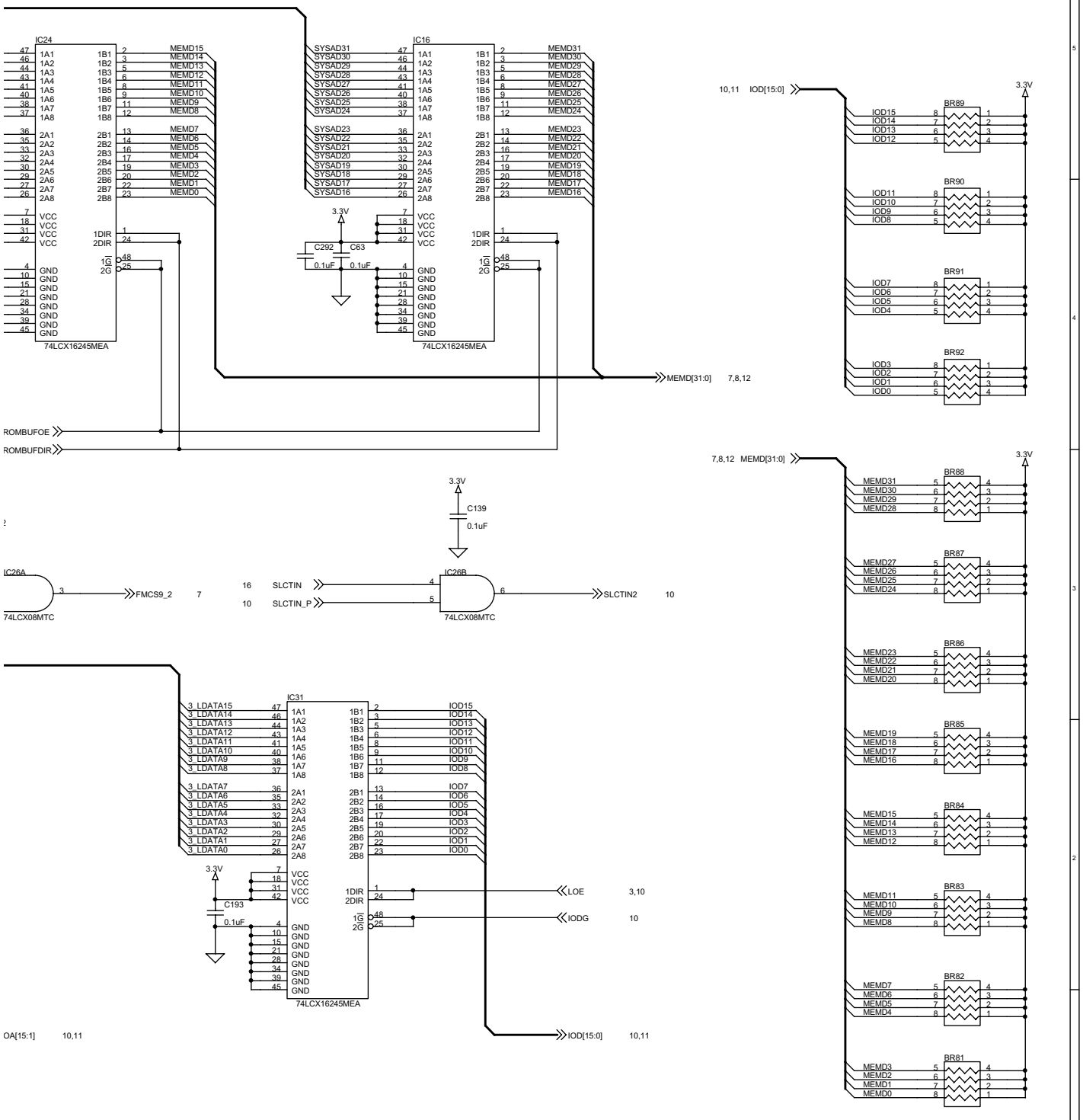
[SDRAM]


MWE
MCS0
MRASA
MCASA
3_MD[63:0]
SDQMA[7:0]
MAA[12:0]
BSEL0A
BSEL1A
MEMCLK0
CKEA
IC4
IC5
IC6
IC7
MT48LC8M16A2TG-75
3.3V
C11
C12
C13
C14
C297
C298
C299
C300
0.1uF
SDQMA1
SDQMA0
SDQMA3
SDQMA2
SDQMA5
SDQMA4
SDQMA7
SDQMA6

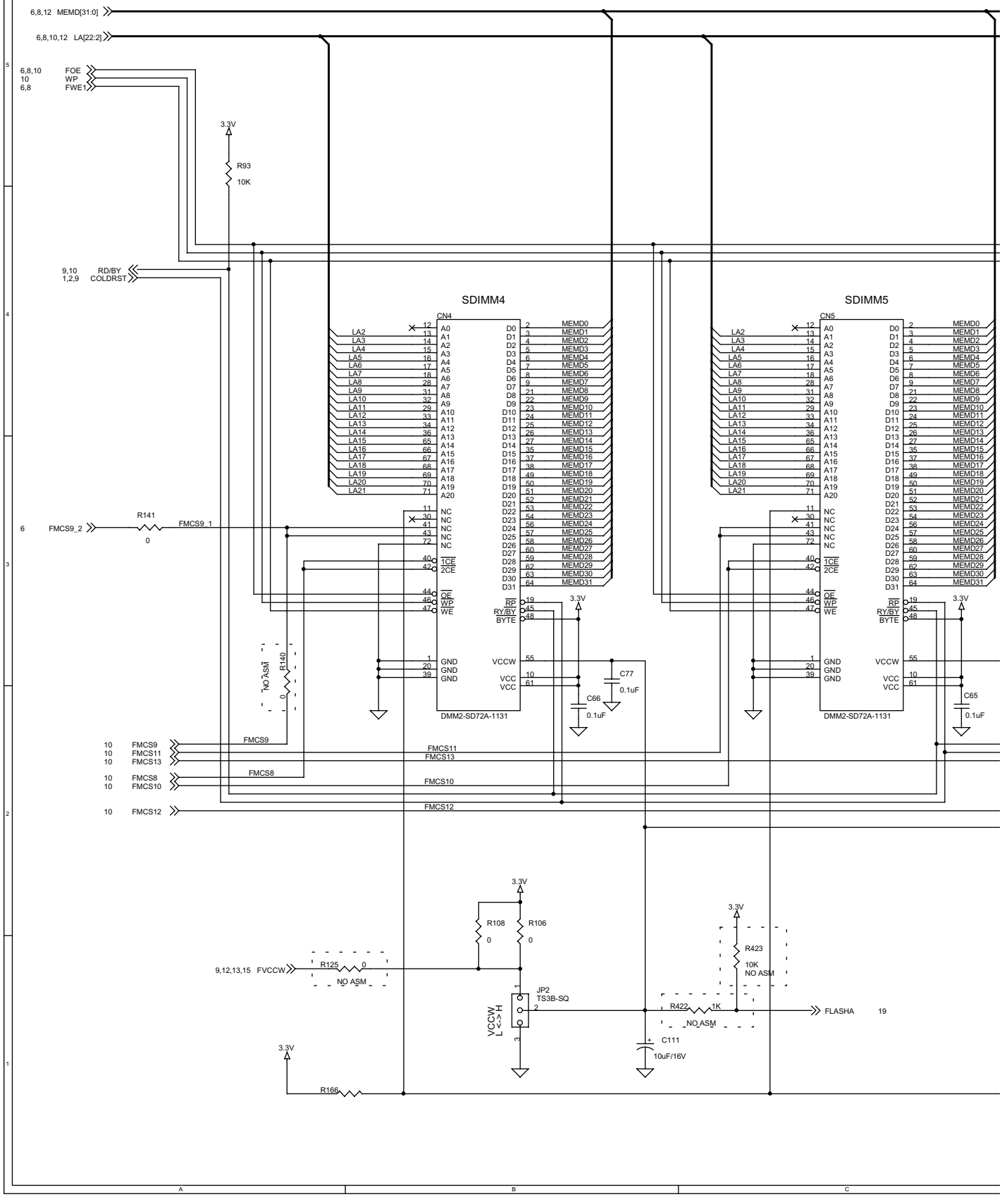

SDRAM DIMM Slot
MAA[12:0]
SDQMA[7:0]
3_MD[63:0]
MWE
BSEL1A
MCS1A
MEMCLK1
CKEA
MEMCLK3
MEMCLK4
MCASA
MCS2A
MRASA
BSEL0A
CKEA
MEMCLK2
SDA
SCL
3.3V
CN3
DMM168-FLAA2-3A133
IC6
IC7
MT48LC8M16A2TG-75
C299
C300
C24
C23
C31
C44
C32
C41
C42
0.1uF
R45
R44
10K

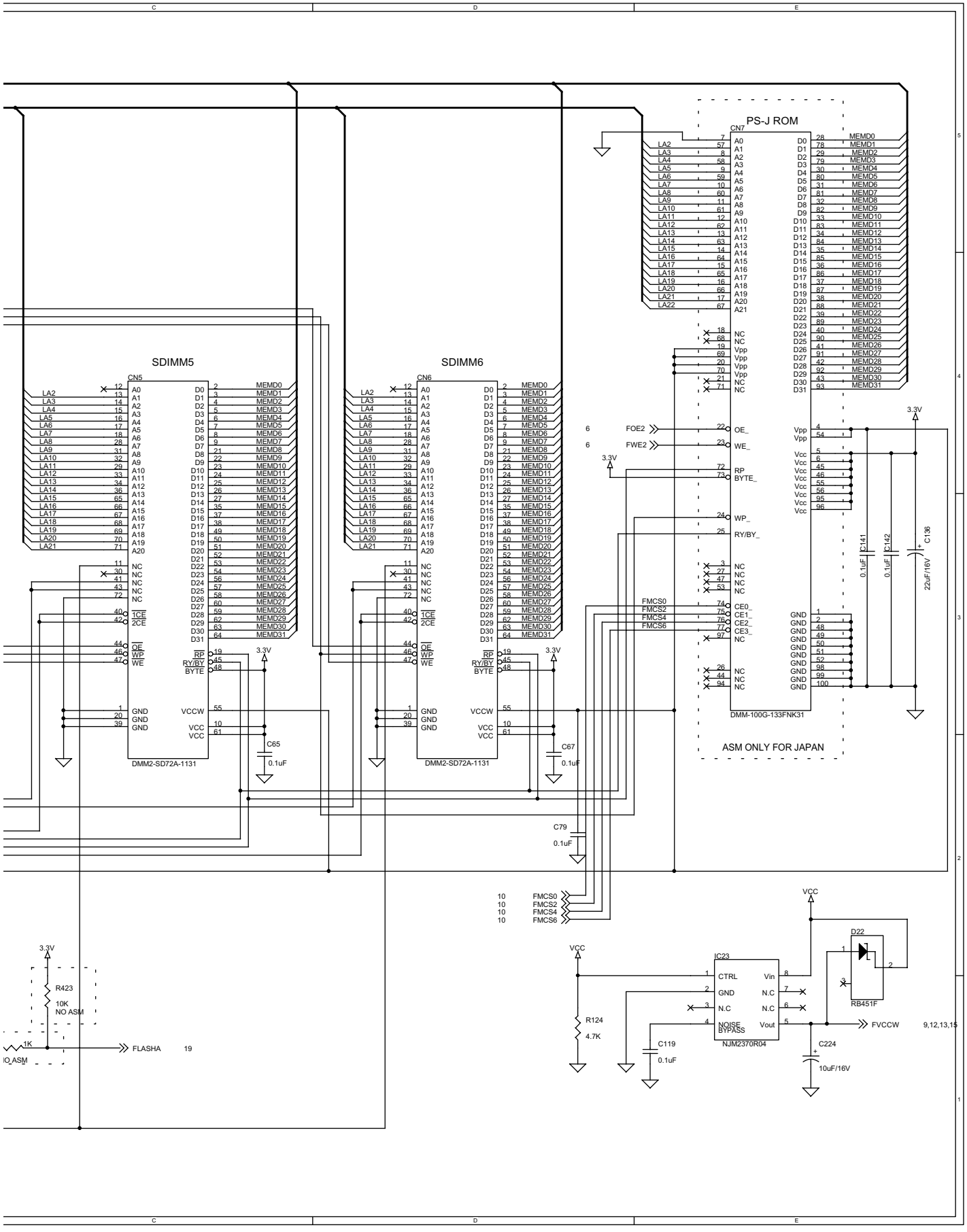
[BUFFER]


2 SYSAD[54:33]
2,4 SYSAD[31:0]
IC21
74LCX16244MEA
IC24
74LCX16245MEA
IC12
74LCX244MTC
3.3V
C293
C294
C91
C295
C296
C116
C62
0.1uF
ROMBUFOE
ROMBUFDIR
LA[22:2]
7,8,10,12
7,8,10 FOE
FOE2
FWE2
IC11C
74LCX32MTC
21 FWE0
3,10,12 ROMWE
FWE1
7,8
IC26A
74LCX08MTC
3,10 BOOTCS
FMCS9_2
16 SLCTIN
10 SLCTIN_P
3 3_LDATA[15:0]
IC34
74LCX16373MEA
IC31
3 ALE
C151
C193
IOA[15:1]
10,11

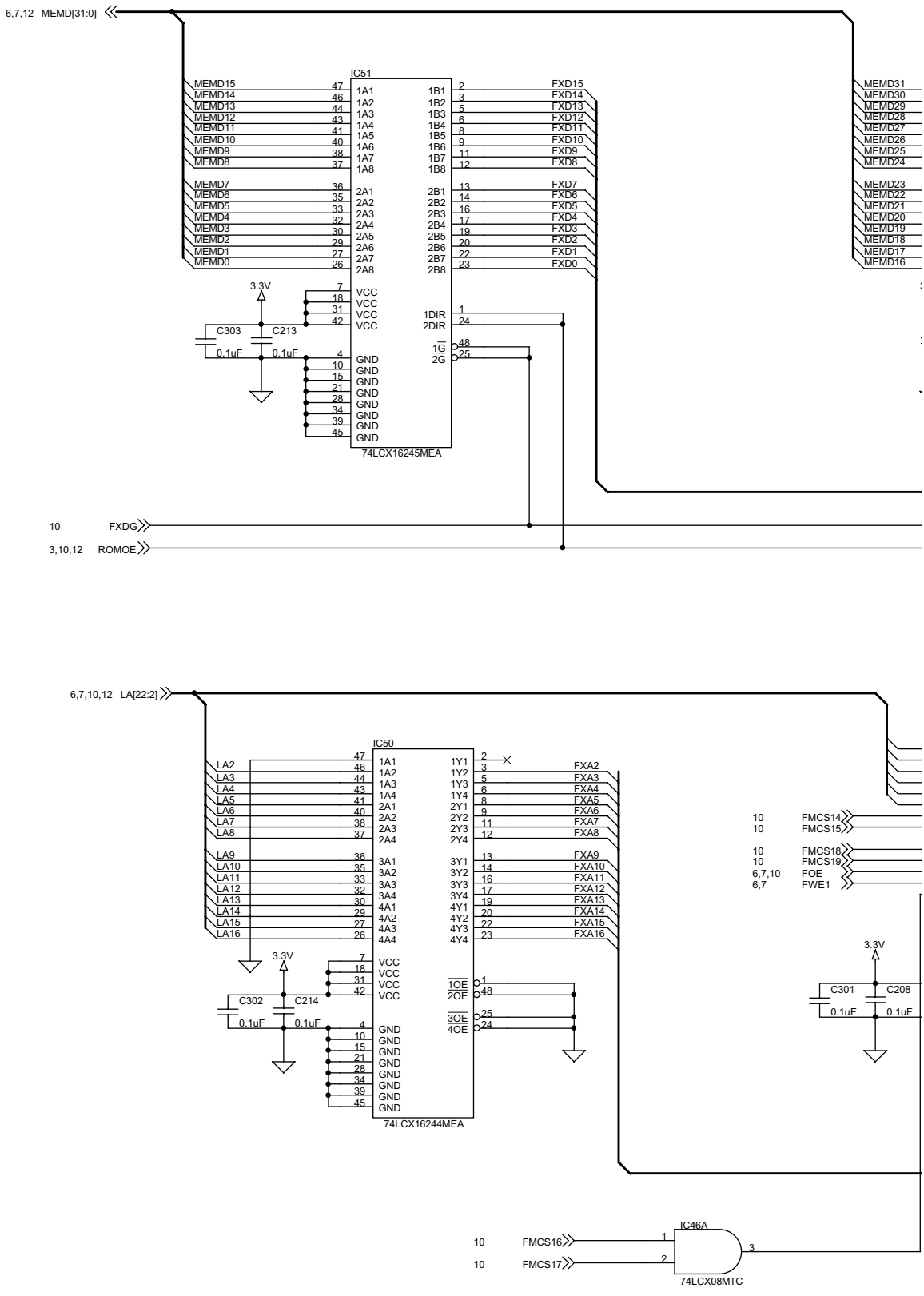

IC24
74LCX16245MEA
IC16
74LCX16245MEA
MEMD[31:0] 7,8,12
ROMBUFOE
ROMBUFDIR
C292
C63
0.1uF
3.3V
10,11 IOD[15:0]
BR89
BR90
BR91
BR92
7,8,12 MEMD[31:0]
BR88
BR87
BR86
BR85
BR84
BR83
BR82
BR81
C139
IC26A
IC26B
74LCX08MTC
FMCS9_2 7
SLCTIN 16
SLCTIN_P 10
SLCTIN2 10
IC31
LDATA[15:1] 10,11
C193
LOE 3,10
IODG 10
IOD[15:0] 10,11

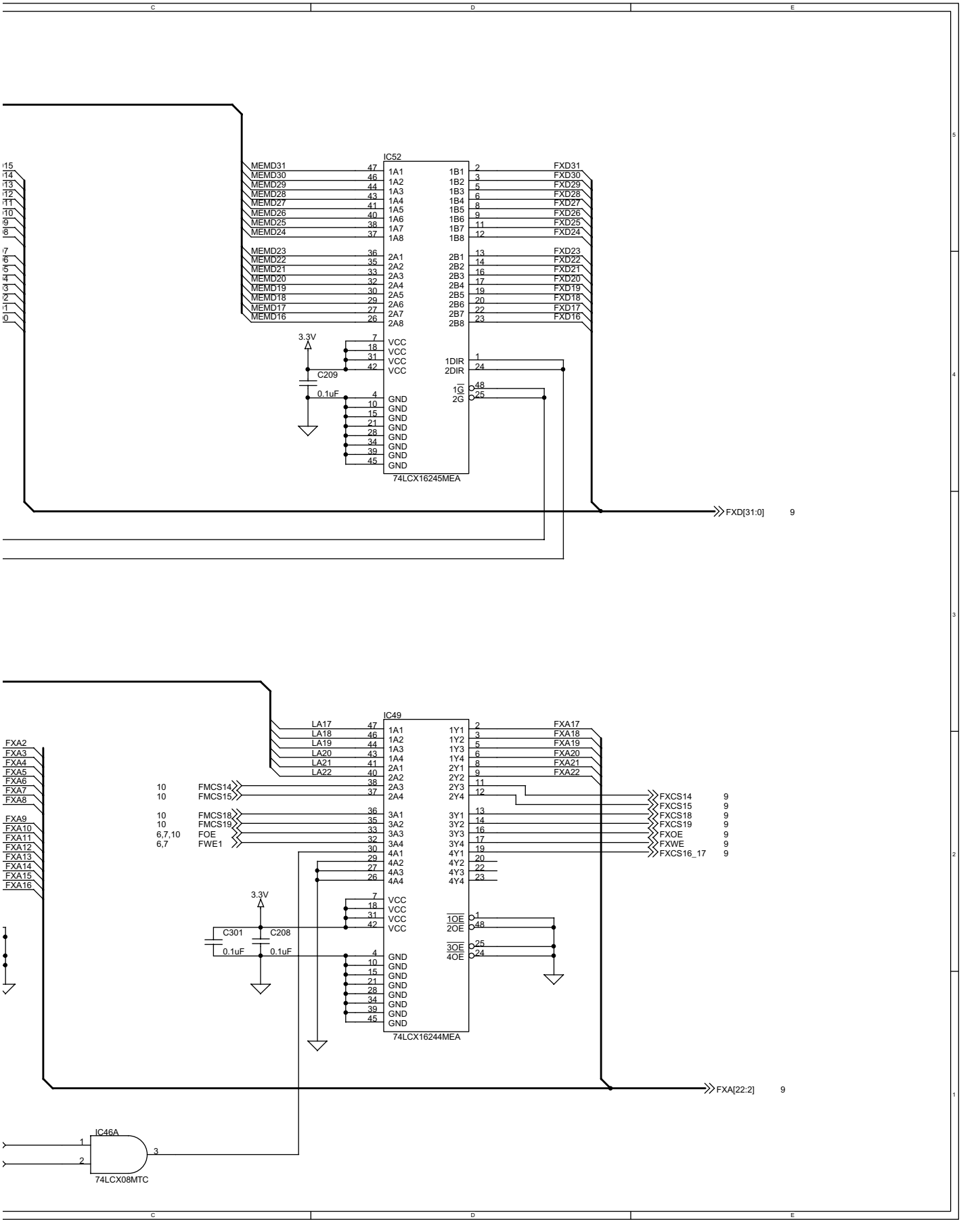
[FLASH SDIMM]


6,8,12 MEMD[31:0]
6,8,10,12 LA[22:2]
6,8,10 FOE
10 WP
6,8 FWE1
3.3V
R93
10K
9,10 RD/BY
1,2,9 COLDRST
SDIMM4
SDIMM5
CN4
CN5
DMM2-SD72A-1131
R141
0
6 FMCS9_2
FMCS9_1
R140
NO ASM
C77
0.1uF
C66
0.1uF
C65
0.1uF
10 FMCS9
10 FMCS11
10 FMCS13
10 FMCS8
10 FMCS10
10 FMCS12
R108
R106
9,12,13,15 FVCCW
R125
NO ASM
JP2
TS3B-SQ
VCCW
L->H
R423
10K
NO ASM
R422
1K
NO ASM
C111
10uF/16V
FLASHA 19
R166

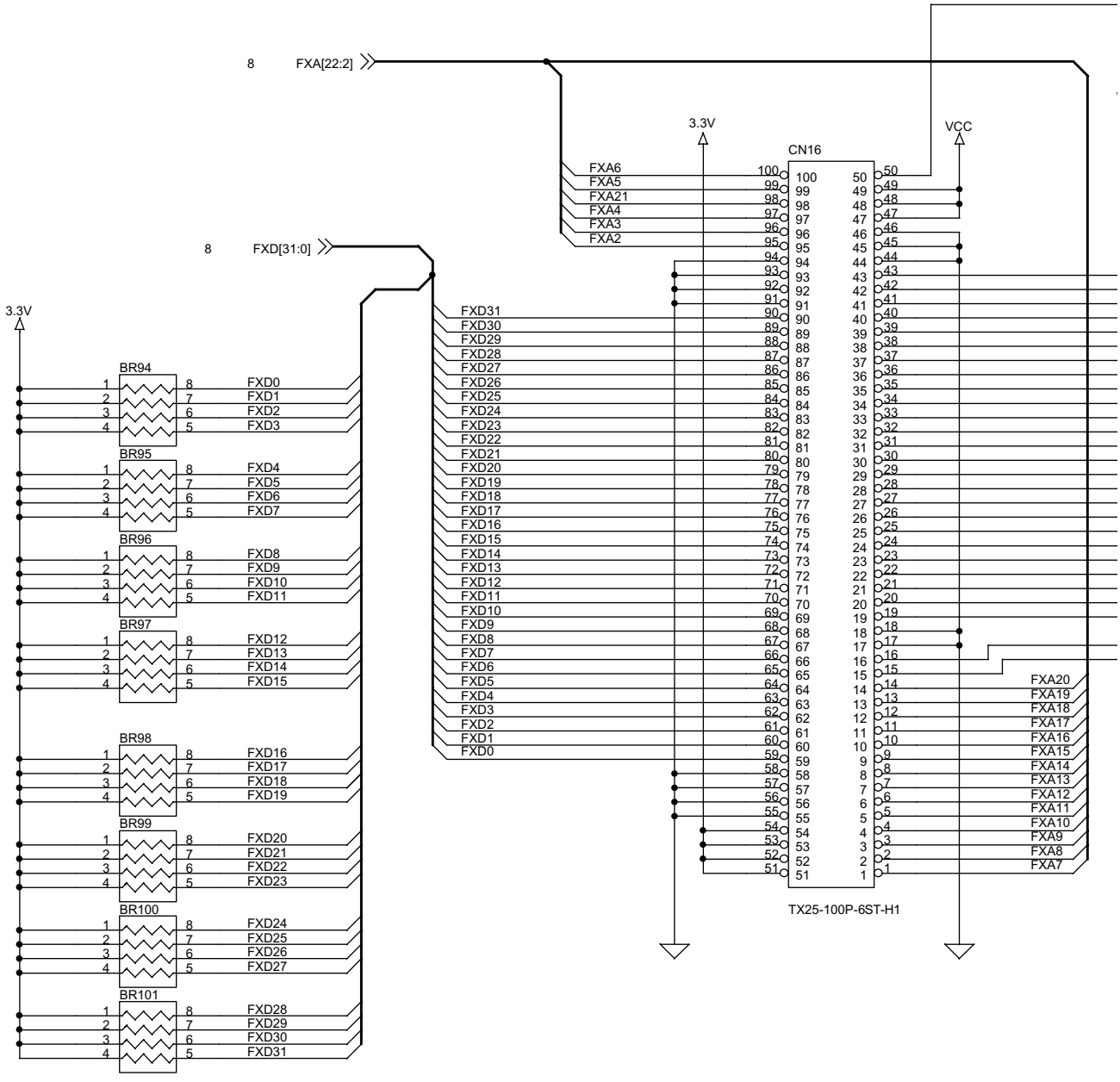

SDIMM5
CN5
SDIMM6
CN6
DMM2-SD72A-1131
DMM2-SD72A-1131
PS-J ROM
CN7
DMM-100G-133FNK31
ASM ONLY FOR JAPAN
3.3V
VCC
C65
0.1uF
C67
0.1uF
C79
0.1uF
C141
0.1uF
C142
0.1uF
C136
22uF/16V
R423
10K
NO ASM
1K
FLASHA
19
R124
4.7K
C119
0.1uF
C224
10uF/16V
IC23
CTRL
GND
N.C
NOISE BYPASS
Vin
N.C
N.C
Vout
NJM2370R04
D22
RB451F
FVCCW
9,12,13,15

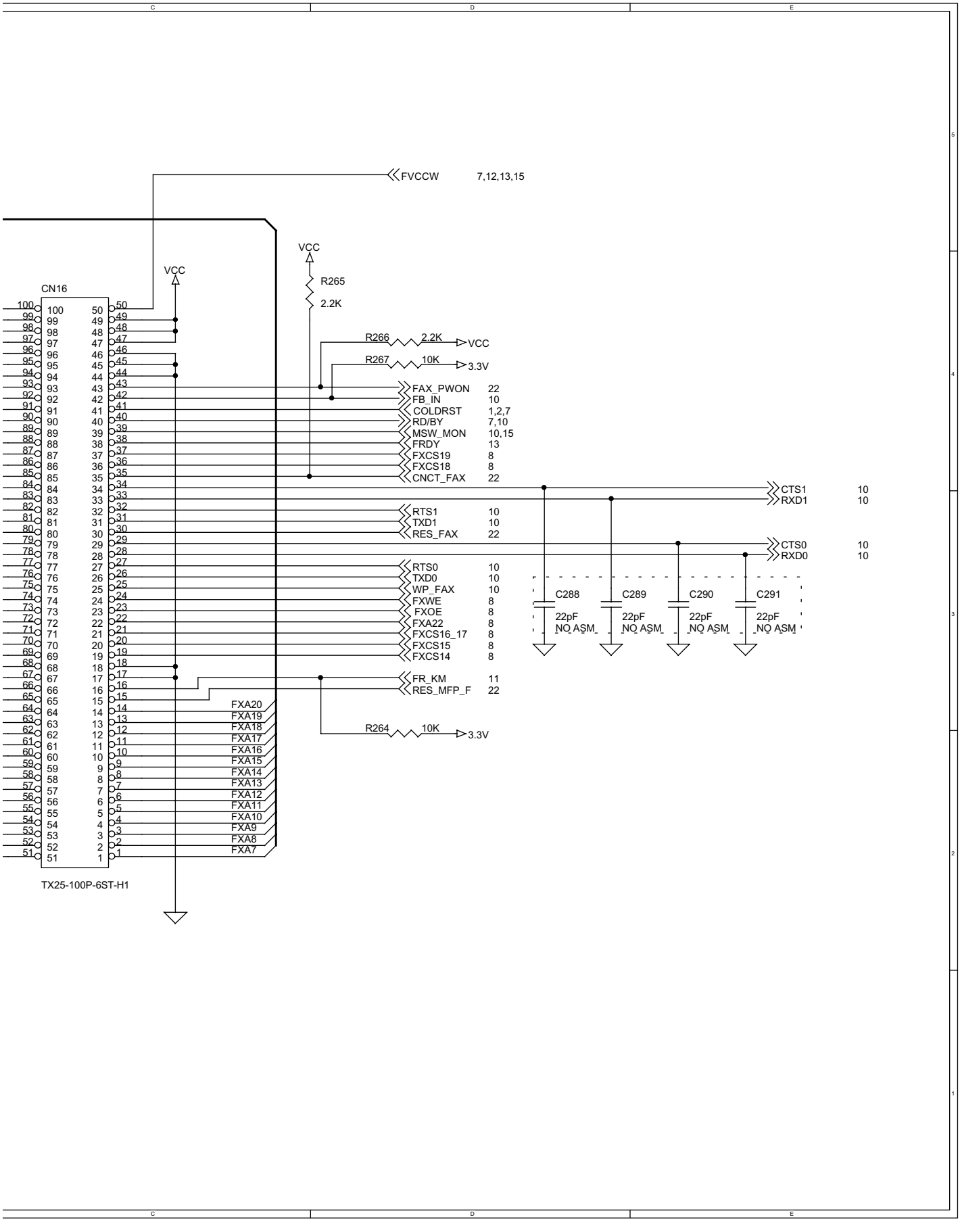
[FAX I/F BUF]

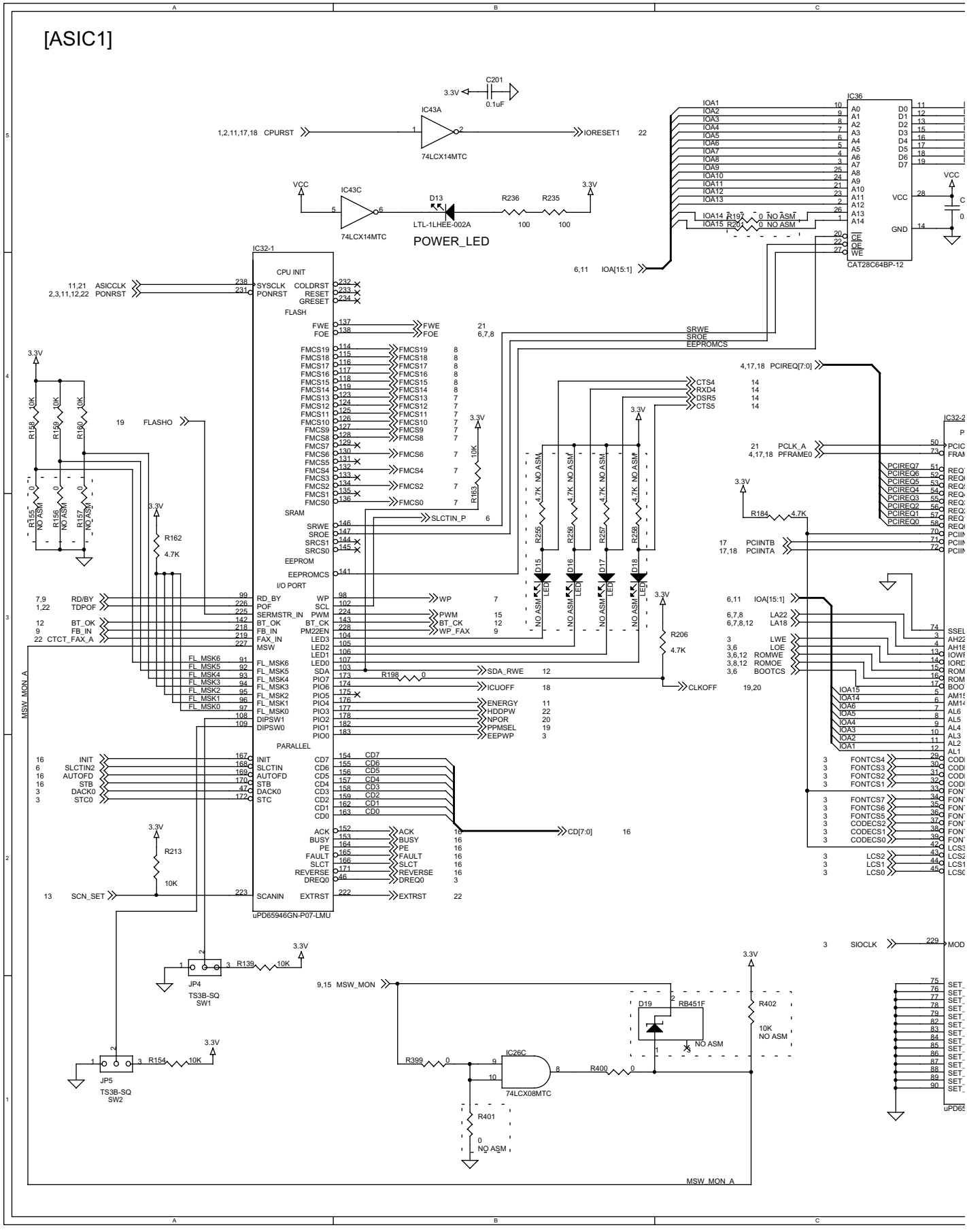

6,7,12 MEMD[31:0]
IC51
MEMD15 MEMD14 MEMD13 MEMD12 MEMD11 MEMD10 MEMD9 MEMD8
MEMD7 MEMD6 MEMD5 MEMD4 MEMD3 MEMD2 MEMD1 MEMD0
1A1 1A2 1A3 1A4 1A5 1A6 1A7 1A8
2A1 2A2 2A3 2A4 2A5 2A6 2A7 2A8
1B1 1B2 1B3 1B4 1B5 1B6 1B7 1B8
2B1 2B2 2B3 2B4 2B5 2B6 2B7 2B8
FXD15 FXD14 FXD13 FXD12 FXD11 FXD10 FXD9 FXD8
FXD7 FXD6 FXD5 FXD4 FXD3 FXD2 FXD1 FXD0
MEMD31 MEMD30 MEMD29 MEMD28 MEMD27 MEMD26 MEMD25 MEMD24
MEMD23 MEMD22 MEMD21 MEMD20 MEMD19 MEMD18 MEMD17 MEMD16
3.3V
VCC
GND
1DIR
2DIR
1G
2G
C303 0.1uF
C213 0.1uF
74LCX16245MEA
10 FXDG
3,10,12 ROMOE
6,7,10,12 LA[22:2]
IC50
LA2 LA3 LA4 LA5 LA6 LA7 LA8
LA9 LA10 LA11 LA12 LA13 LA14 LA15 LA16
1A1 1A2 1A3 1A4 2A1 2A2 2A3 2A4
3A1 3A2 3A3 3A4 4A1 4A2 4A3 4A4
1Y1 1Y2 1Y3 1Y4 2Y1 2Y2 2Y3 2Y4
3Y1 3Y2 3Y3 3Y4 4Y1 4Y2 4Y3 4Y4
FXA2 FXA3 FXA4 FXA5 FXA6 FXA7 FXA8
FXA9 FXA10 FXA11 FXA12 FXA13 FXA14 FXA15 FXA16
1OE 2OE 3OE 4OE
C302 0.1uF
C214 0.1uF
74LCX16244MEA
10 FMCS14
10 FMCS15
10 FMCS18
10 FMCS19
6,7,10 FOE
6,7 FWE1
C301 0.1uF
C208 0.1uF
IC46A
10 FMCS16
10 FMCS17
74LCX08MTC

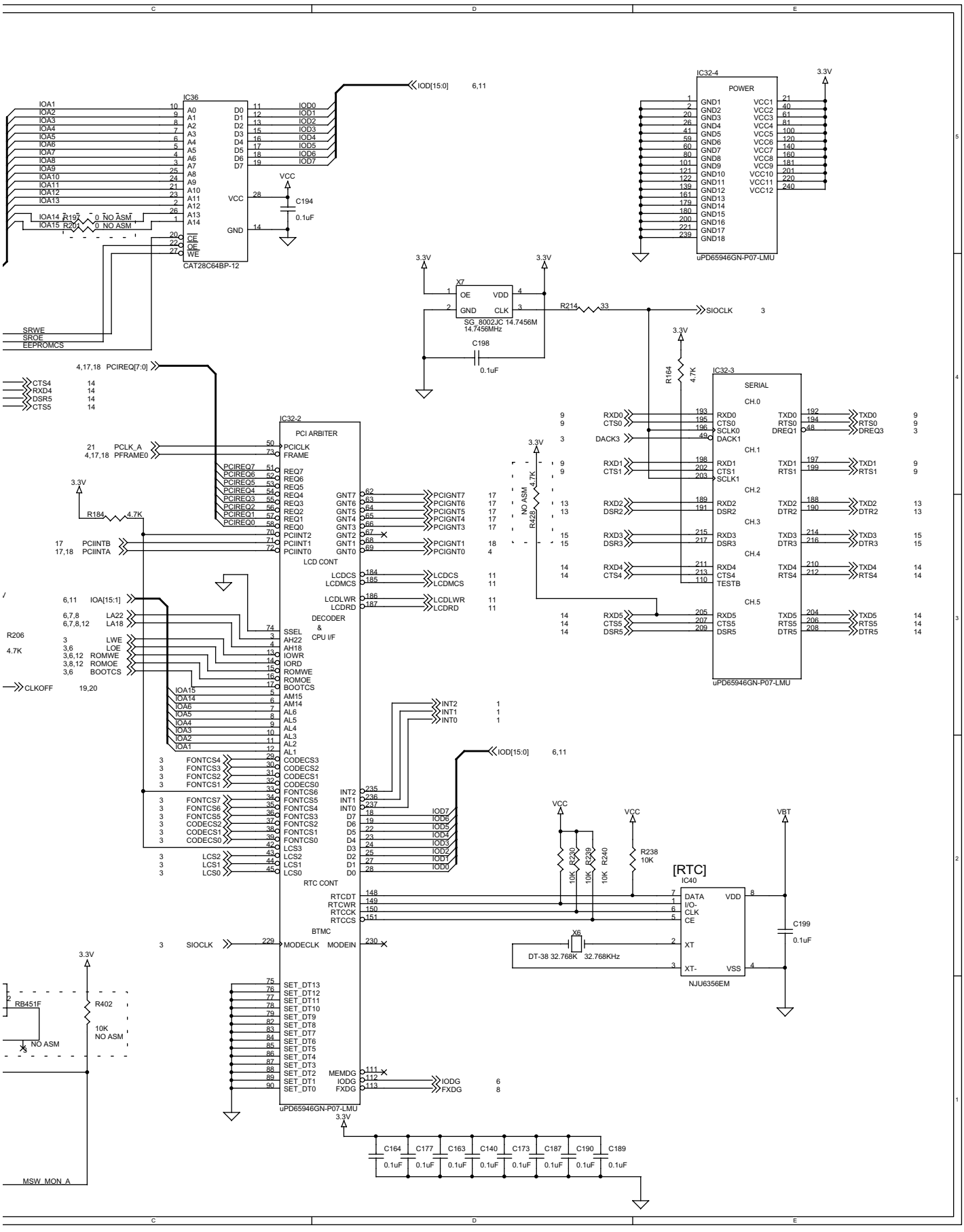

IC52
MEMD31
MEMD30
MEMD29
MEMD28
MEMD27
MEMD26
MEMD25
MEMD24
MEMD23
MEMD22
MEMD21
MEMD20
MEMD19
MEMD18
MEMD17
MEMD16
1A1
1A2
1A3
1A4
1A5
1A6
1A7
1A8
2A1
2A2
2A3
2A4
2A5
2A6
2A7
2A8
1B1
1B2
1B3
1B4
1B5
1B6
1B7
1B8
2B1
2B2
2B3
2B4
2B5
2B6
2B7
2B8
FXD31
FXD30
FXD29
FXD28
FXD27
FXD26
FXD25
FXD24
FXD23
FXD22
FXD21
FXD20
FXD19
FXD18
FXD17
FXD16
3.3V
VCC
1DIR
2DIR
1G
2G
C209
0.1uF
GND
74LCX16245MEA
FXD[31:0]
9
IC49
LA17
LA18
LA19
LA20
LA21
LA22
FXA17
FXA18
FXA19
FXA20
FXA21
FXA22
FXA2
FXA3
FXA4
FXA5
FXA6
FXA7
FXA8
FXA9
FXA10
FXA11
FXA12
FXA13
FXA14
FXA15
FXA16
FMCS14
FMCS15
FMCS18
FMCS19
FOE
FWE1
FXCS14
FXCS15
FXCS18
FXCS19
FXOE
FXWE
FXCS16_17
1Y1
1Y2
1Y3
1Y4
2Y1
2Y2
2Y3
2Y4
3Y1
3Y2
3Y3
3Y4
4Y1
4Y2
4Y3
4Y4
1OE
2OE
3OE
4OE
C301
C208
0.1uF
74LCX16244MEA
FXA[22:2]
IC46A
74LCX08MTC

[FAX I/F CN]

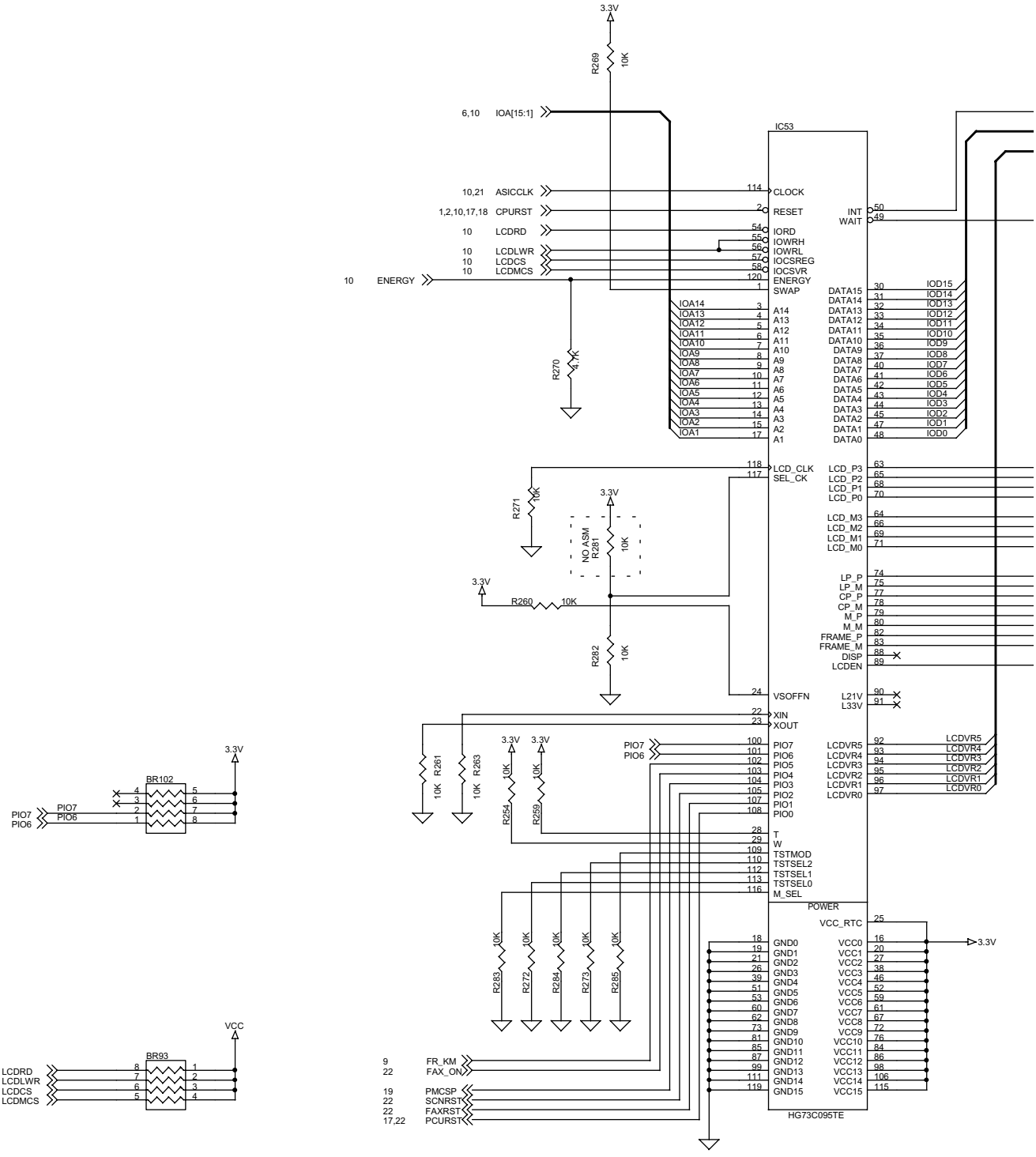

8 FXA[22:2]
8 FXD[31:0]
3.3V
VCC
CN16
FXA6
FXA5
FXA21
FXA4
FXA3
FXA2
FXD31
FXD30
FXD29
FXD28
FXD27
FXD26
FXD25
FXD24
FXD23
FXD22
FXD21
FXD20
FXD19
FXD18
FXD17
FXD16
FXD15
FXD14
FXD13
FXD12
FXD11
FXD10
FXD9
FXD8
FXD7
FXD6
FXD5
FXD4
FXD3
FXD2
FXD1
FXD0
FXA20
FXA19
FXA18
FXA17
FXA16
FXA15
FXA14
FXA13
FXA12
FXA11
FXA10
FXA9
FXA8
FXA7
TX25-100P-6ST-H1
BR94
BR95
BR96
BR97
BR98
BR99
BR100
BR101

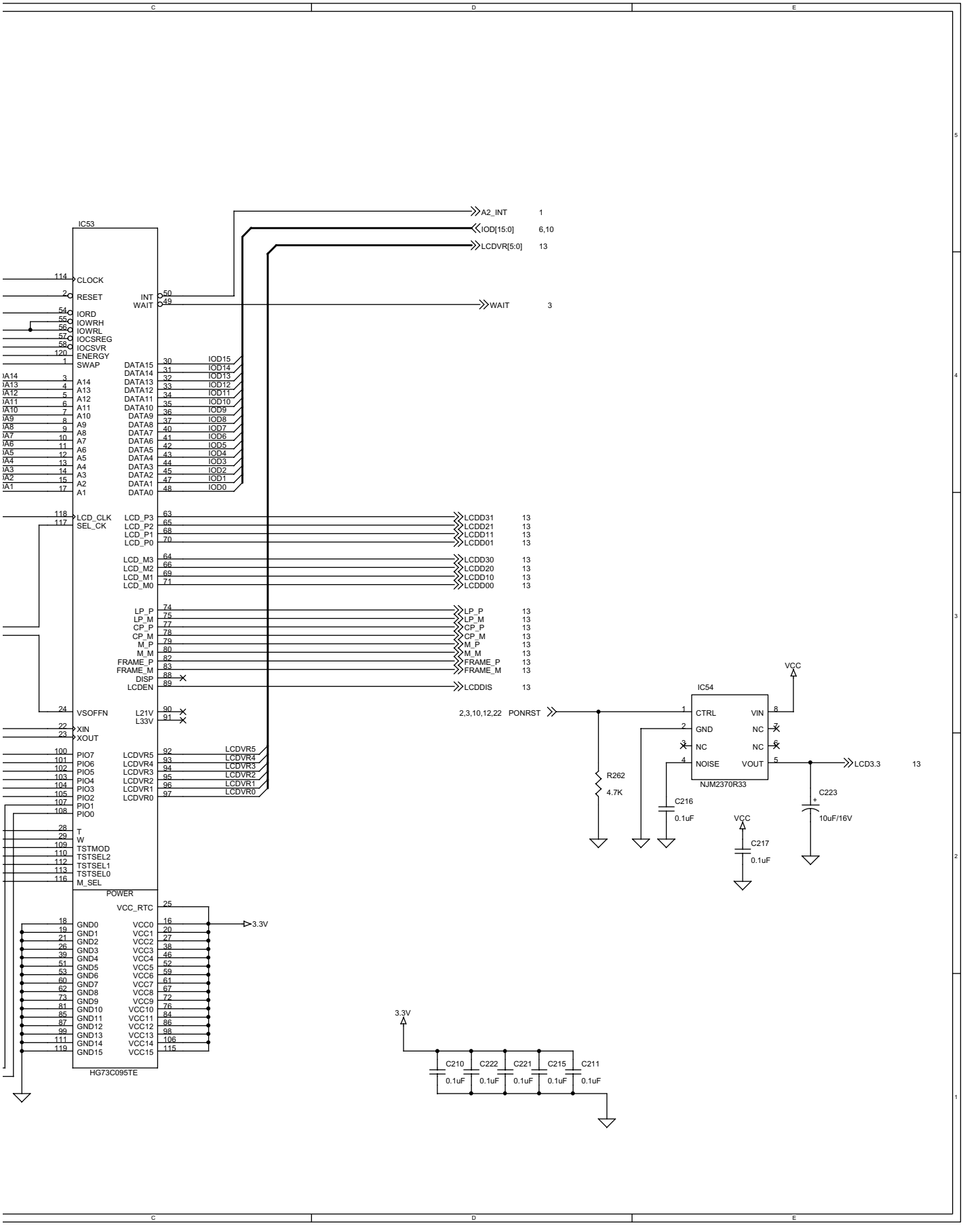

FVCCW 7,12,13,15
VCC
R265
2.2K
VCC
CN16
R266 2.2K VCC
R267 10K 3.3V
FAX_PWON 22
FB_IN 10
COLDRST 1,2,7
RD/BY 7,10
MSW_MON 10,15
FRDY 13
FXCS19 8
FXCS18 8
CNCT_FAX 22
CTS1 10
RXD1 10
RTS1 10
TXD1 10
RES_FAX 22
CTS0 10
RXD0 10
RTS0 10
TXD0 10
WP_FAX 10
FXWE 8
FXOE 8
FXA22 8
FXCS16_17 8
FXCS15 8
FXCS14 8
C288 22pF NO ASM
C289 22pF NO ASM
C290 22pF NO ASM
C291 22pF NO ASM
FR_KM 11
RES_MFP_F 22
R264 10K 3.3V
FXA20
FXA19
FXA18
FXA17
FXA16
FXA15
FXA14
FXA13
FXA12
FXA11
FXA10
FXA9
FXA8
FXA7
TX25-100P-6ST-H1


[ASIC1]
POWER_LED
IC32-1
CPU INIT
FLASH
SRAM
EEPROM
I/O PORT
PARALLEL
uPD65946GN-P07-LMU
IC36
CAT28C64BP-12
74LCX14MTC
74LCX08MTC
LTL-1LHEE-002A
TS3B-SQ SW1
TS3B-SQ SW2
MSW_MON_A

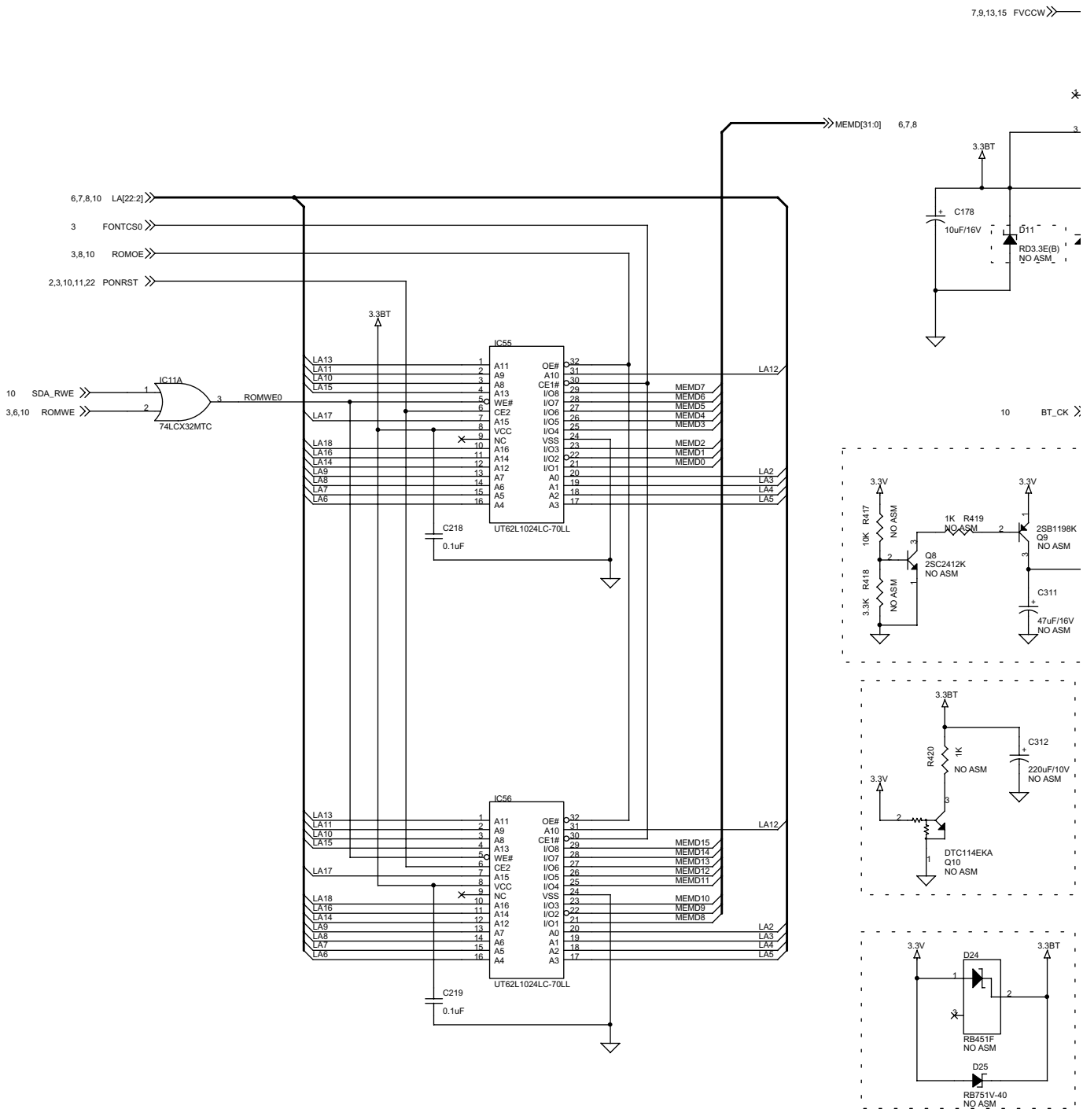

IC36
CAT28C64BP-12
IOD[15:0] 6,11
IOA1
IOA2
IOA3
IOA4
IOA5
IOA6
IOA7
IOA8
IOA9
IOA10
IOA11
IOA12
IOA13
IOA14 R197 0 NO ASM
IOA15 R20 0 NO ASM
VCC
C194
0.1uF
SRWE
SROE
EEPROMCS
IC32-4
POWER
uPD65946GN-P07-LMU
3.3V
X7
SG_8002JC 14.7456M
14.7456MHz
R214 33
SIOCLK 3
C198
0.1uF
R164 4.7K
IC32-3
SERIAL
CH.0
CH.1
CH.2
CH.3
CH.4
CH.5
TESTB
uPD65946GN-P07-LMU
4,17,18 PCIREQ[7:0]
CTS4 14
RXD4 14
DSR5 14
CTS5 14
IC32-2
PCI ARBITER
PCICLK
FRAME
REQ7
REQ6
REQ5
REQ4
REQ3
REQ2
REQ1
REQ0
PCIINT2
PCIINT1
PCIINT0
GNT7
GNT6
GNT5
GNT4
GNT3
GNT2
GNT1
GNT0
PCIGNT7 17
PCIGNT6 17
PCIGNT5 17
PCIGNT4 17
PCIGNT3 17
PCIGNT1 18
PCIGNT0 4
LCD CONT
LCDCS
LCDMCS
LCDLWR
LCDRD
DECODER
&
CPU I/F
SSEL
AH22
AH18
IOWR
IORD
ROMWE
ROMOE
BOOTCS
AM15
AM14
AL6
AL5
AL4
AL3
AL2
AL1
INT2
INT1
INT0
CODECS3
CODECS2
CODECS1
CODECS0
FONTCS6
FONTCS5
FONTCS4
FONTCS3
FONTCS2
FONTCS1
FONTCS0
LCS3
LCS2
LCS1
LCS0
RTC CONT
RTCDT
RTCWR
RTCCK
RTCCS
BTMC
MODECLK
MODEIN
SET_DT13
SET_DT12
SET_DT11
SET_DT10
SET_DT9
SET_DT8
SET_DT7
SET_DT6
SET_DT5
SET_DT4
SET_DT3
SET_DT2
SET_DT1
SET_DT0
MEMDG
IODG 6
FXDG 8
uPD65946GN-P07-LMU
6,11 IOA[15:1]
6,7,8 LA22
6,7,8,12 LA18
R206 4.7K
3 LWE
3,6 LOE
3,6,12 ROMWE
3,8,12 ROMOE
3,6 BOOTCS
CLKOFF 19,20
17 PCIINTB
17,18 PCIINTA
R184 4.7K
R428 4.7K NO ASM
[RTC]
IC40
NJU6356EM
X6
DT-38 32.768K 32.768KHz
R230 10K
R239 10K
R240 10K
R238 10K
C199
0.1uF
VBT
RB451F
R402 10K NO ASM
MSW_MON_A
C164 C177 C163 C140 C173 C187 C190 C189
0.1uF

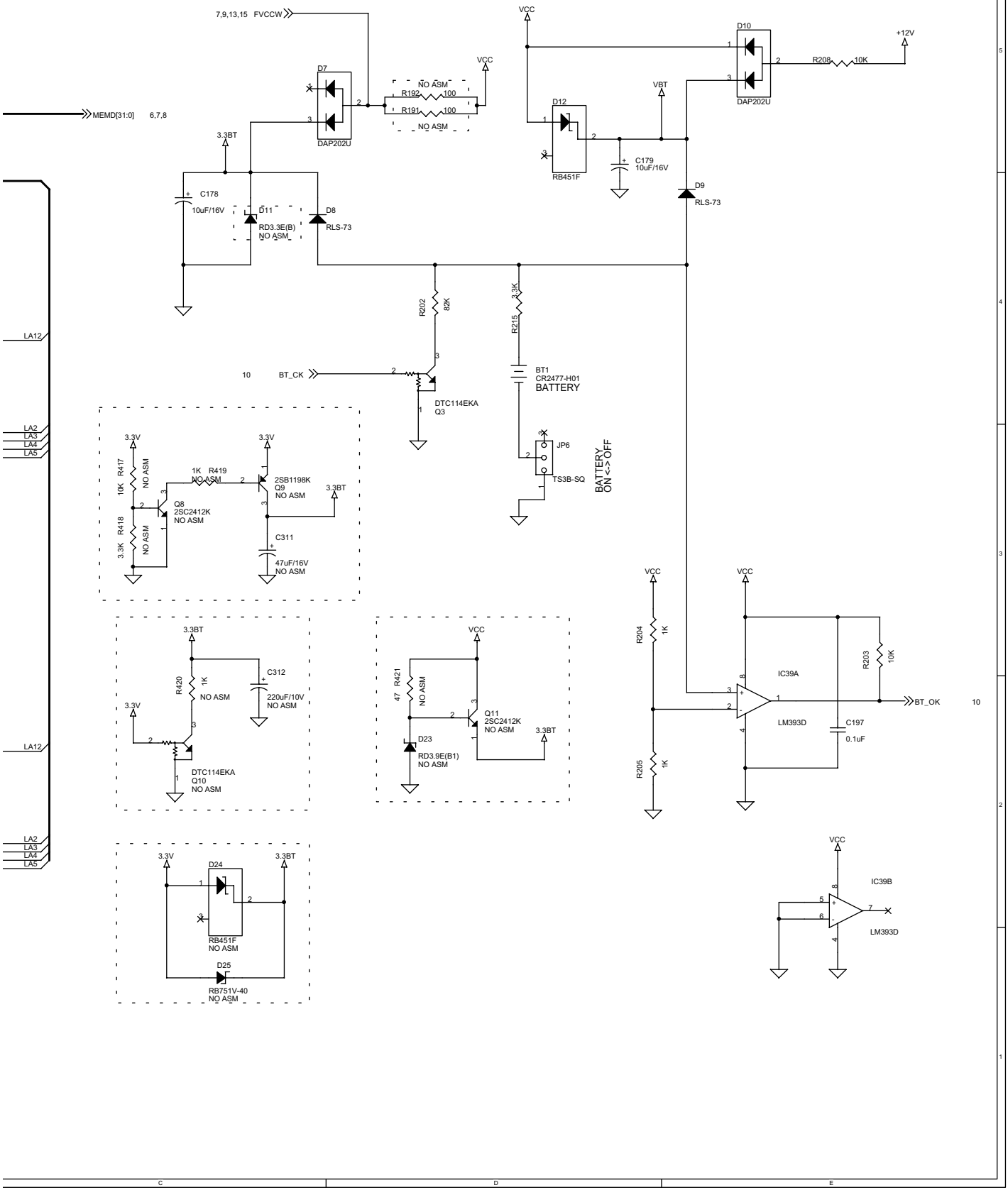
[ASIC2]

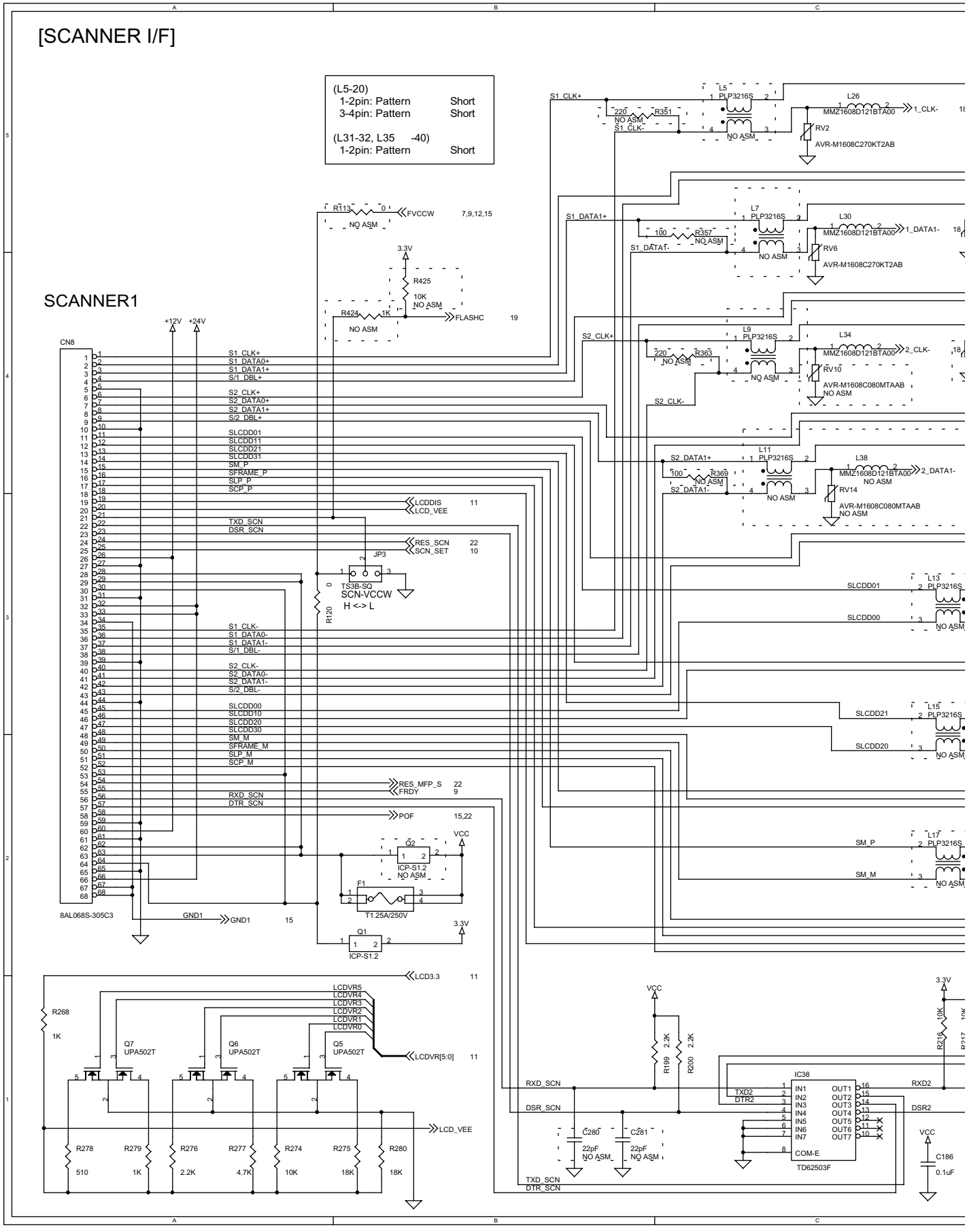

3.3V
R269
10K
6,10 IOA[15:1]
IC53
10,21 ASICCLK
1,2,10,17,18 CPURST
10 LCDRD
10 LCDLWR
10 LCDCS
10 LCDMCS
10 ENERGY
CLOCK
RESET
IORD
IOWRH
IOWRL
IOCSREG
IOCSVR
ENERGY
SWAP
INT
WAIT
IOA14 IOA13 IOA12 IOA11 IOA10 IOA9 IOA8 IOA7 IOA6 IOA5 IOA4 IOA3 IOA2 IOA1
A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1
DATA15 DATA14 DATA13 DATA12 DATA11 DATA10 DATA9 DATA8 DATA7 DATA6 DATA5 DATA4 DATA3 DATA2 DATA1 DATA0
IOD15 IOD14 IOD13 IOD12 IOD11 IOD10 IOD9 IOD8 IOD7 IOD6 IOD5 IOD4 IOD3 IOD2 IOD1 IOD0
R270
4.7K
LCD_CLK
SEL_CK
LCD_P3 LCD_P2 LCD_P1 LCD_P0
LCD_M3 LCD_M2 LCD_M1 LCD_M0
LP_P LP_M CP_P CP_M M_P M_M FRAME_P FRAME_M DISP LCDEN
R271
10K
NO ASM
R261
R260
R282
VSOFFN
L21V
L33V
XIN
XOUT
R261 R263
R254 R259
PIO7 PIO6
LCDVR5 LCDVR4 LCDVR3 LCDVR2 LCDVR1 LCDVR0
T
W
TSTMOD
TSTSEL2
TSTSEL1
TSTSEL0
M_SEL
POWER
VCC_RTC
GND0 GND1 GND2 GND3 GND4 GND5 GND6 GND7 GND8 GND9 GND10 GND11 GND12 GND13 GND14 GND15
VCC0 VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15
R283 R272 R284 R273 R285
HG73C095TE
BR102
PIO7
PIO6
BR93
VCC
LCDRD
LCDLWR
LCDCS
LCDMCS
9 FR_KM
22 FAX_ON
19 PMCSP
22 SCNRST
22 FAXRST
17,22 PCURST

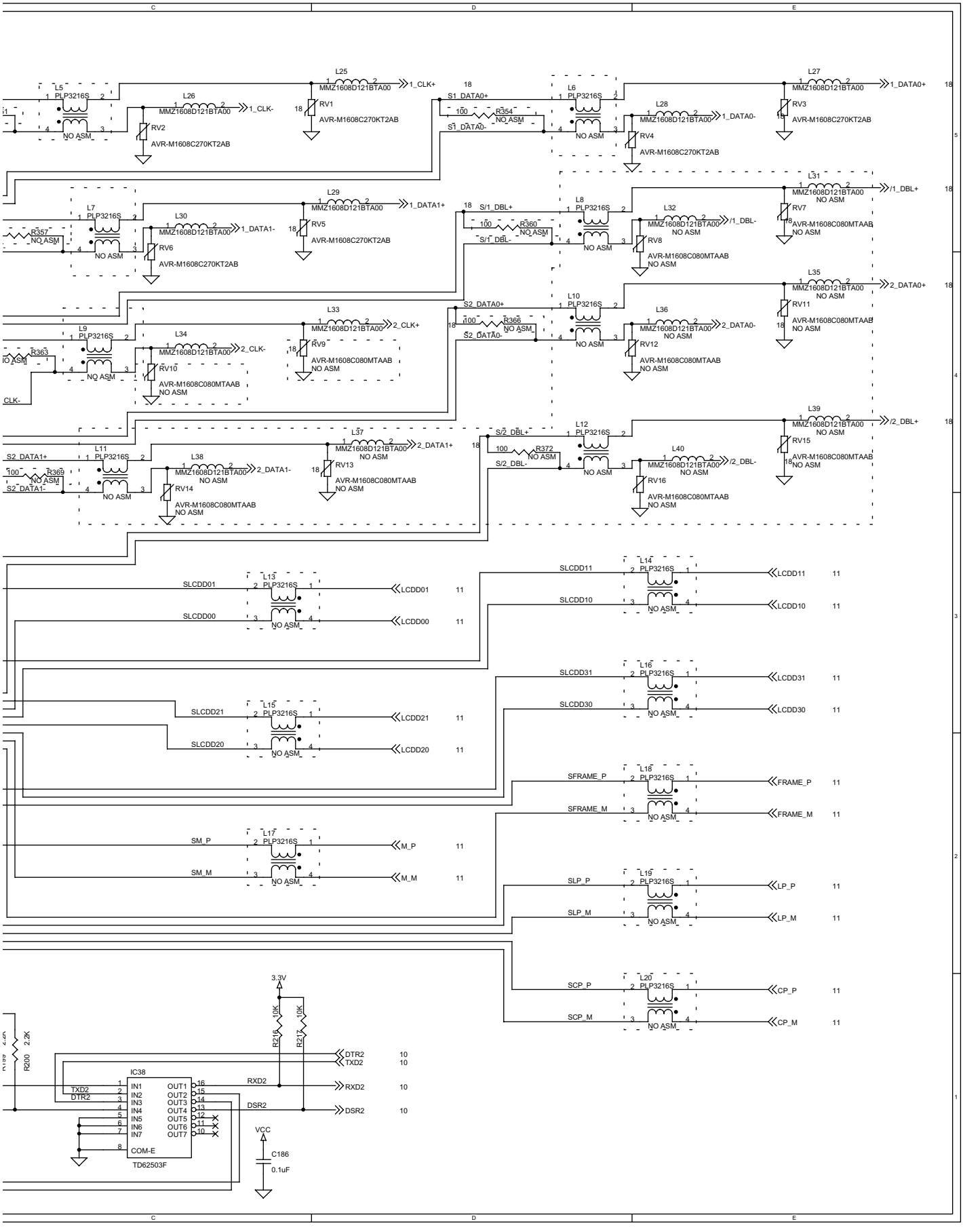

IC53
CLOCK
RESET
IORD
IOWRH
IOWRL
IOCSREG
IOCSVR
ENERGY
SWAP
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
LCD_CLK
SEL_CK
VSOFFN
XIN
XOUT
PIO7
PIO6
PIO5
PIO4
PIO3
PIO2
PIO1
PIO0
T
W
TSTMOD
TSTSEL2
TSTSEL1
TSTSEL0
M_SEL
POWER
VCC_RTC
GND0
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10
GND11
GND12
GND13
GND14
GND15
VCC0
VCC1
VCC2
VCC3
VCC4
VCC5
VCC6
VCC7
VCC8
VCC9
VCC10
VCC11
VCC12
VCC13
VCC14
VCC15
HG73C095TE
INT
WAIT
DATA15
DATA14
DATA13
DATA12
DATA11
DATA10
DATA9
DATA8
DATA7
DATA6
DATA5
DATA4
DATA3
DATA2
DATA1
DATA0
LCD_P3
LCD_P2
LCD_P1
LCD_P0
LCD_M3
LCD_M2
LCD_M1
LCD_M0
LP_P
LP_M
CP_P
CP_M
M_P
M_M
FRAME_P
FRAME_M
DISP
LCDEN
L21V
L33V
LCDVR5
LCDVR4
LCDVR3
LCDVR2
LCDVR1
LCDVR0
A2_INT 1
IOD[15:0] 6,10
LCDVR[5:0] 13
WAIT 3
IOD15
IOD14
IOD13
IOD12
IOD11
IOD10
IOD9
IOD8
IOD7
IOD6
IOD5
IOD4
IOD3
IOD2
IOD1
IOD0
LCDD31 13
LCDD21 13
LCDD11 13
LCDD01 13
LCDD30 13
LCDD20 13
LCDD10 13
LCDD00 13
LP_P 13
LP_M 13
CP_P 13
CP_M 13
M_P 13
M_M 13
FRAME_P 13
FRAME_M 13
LCDDIS 13
2,3,10,12,22 PONRST
3.3V
IC54
CTRL
GND
NC
NOISE
VIN
NC
NC
VOUT
NJM2370R33
LCD3.3 13
VCC
R262
4.7K
C216
0.1uF
C217
0.1uF
C223
10uF/16V
C210
C222
C221
C215
C211
0.1uF

[SRAM / BATTERY]



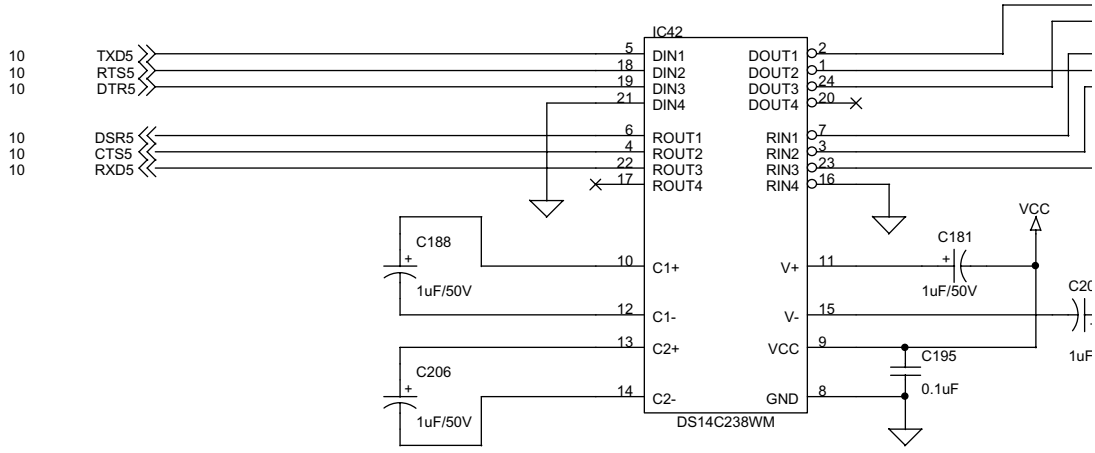

7,9,13,15 FVCCW
MEMD[31:0] 6,7,8
VCC
D7
DAP202U
R192 100
R191 100
NO ASM
3.3BT
C178
10uF/16V
D11
RD3.3E(B)
NO ASM
D8
RLS-73
D10
DAP202U
+12V
R208 10K
VBT
D12
RB451F
C179
10uF/16V
D9
RLS-73
R202 82K
R215 3.3K
BT1
CR2477-H01
BATTERY
10 BT_CK
DTC114EKA
Q3
JP6
TS3B-SQ
BATTERY
ON <-> OFF
LA12
LA2
LA3
LA4
LA5
3.3V
R417 10K NO ASM
R418 3.3K NO ASM
1K R419 NO ASM
Q8
2SC2412K
NO ASM
2SB1198K
Q9
NO ASM
C311
47uF/16V
NO ASM
R420 1K NO ASM
C312
220uF/10V
NO ASM
DTC114EKA
Q10
NO ASM
R421 47 NO ASM
Q11
2SC2412K
NO ASM
D23
RD3.9E(B1)
NO ASM
R204 1K
R205 1K
IC39A
LM393D
R203 10K
C197
0.1uF
BT_OK 10
D24
RB451F
NO ASM
D25
RB751V-40
NO ASM
IC39B
LM393D


[SCANNER I/F]
SCANNER1
(L5-20)
1-2pin: Pattern Short
3-4pin: Pattern Short
(L31-32, L35 -40)
1-2pin: Pattern Short
CN8
8AL068S-305C3
+12V
+24V
3.3V
GND1
S1_CLK+
S1_DATA0+
S1_DATA1+
S/1_DBL+
S2_CLK+
S2_DATA0+
S2_DATA1+
S/2_DBL+
SLCDD01
SLCDD11
SLCDD21
SLCDD31
SM_P
SFRAME_P
SLP_P
SCP_P
TXD_SCN
DSR_SCN
S1_CLK-
S1_DATA0-
S1_DATA1-
S/1_DBL-
S2_CLK-
S2_DATA0-
S2_DATA1-
S/2_DBL-
SLCDD00
SLCDD10
SLCDD20
SLCDD30
SM_M
SFRAME_M
SLP_M
SCP_M
RXD_SCN
DTR_SCN
R113
FVCCW
NO ASM
R425
10K
R424
1K
FLASHC
LCDDIS
LCD_VEE
RES_SCN
SCN_SET
JP3
TS3B-SQ
SCN-VCCW
H <-> L
R120
RES_MFP_S
FRDY
POF
Q2
ICP-S1.2
F1
T1.25A/250V
Q1
LCD3.3
LCDVR5
LCDVR4
LCDVR3
LCDVR2
LCDVR1
LCDVR0
LCDVR[5:0]
R268
Q7 UPA502T
Q6 UPA502T
Q5 UPA502T
LCD_VEE
R278 510
R279 1K
R276 2.2K
R277 4.7K
R274 10K
R275 18K
R280 18K
L5 PLP3216S
L7 PLP3216S
L9 PLP3216S
L11 PLP3216S
L13 PLP3216S
L15 PLP3216S
L17 PLP3216S
L26 MMZ1608D121BTA00
L30 MMZ1608D121BTA00
L34 MMZ1608D121BTA00
L38 MMZ1608D121BTA00
RV2 AVR-M1608C270KT2AB
RV6 AVR-M1608C270KT2AB
RV10 AVR-M1608C080MTAAB
RV14 AVR-M1608C080MTAAB
R351 220
R357 100
R363 220
R369 100
1_CLK-
1_DATA1-
2_CLK-
2_DATA1-
IC38
TD62503F
IN1 IN2 IN3 IN4 IN5 IN6 IN7
OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7
COM-E
TXD2
DTR2
RXD2
DSR2
R199 2.2K
R200 2.2K
R216 10K
C280 22pF
C281 22pF
C186 0.1uF
VCC

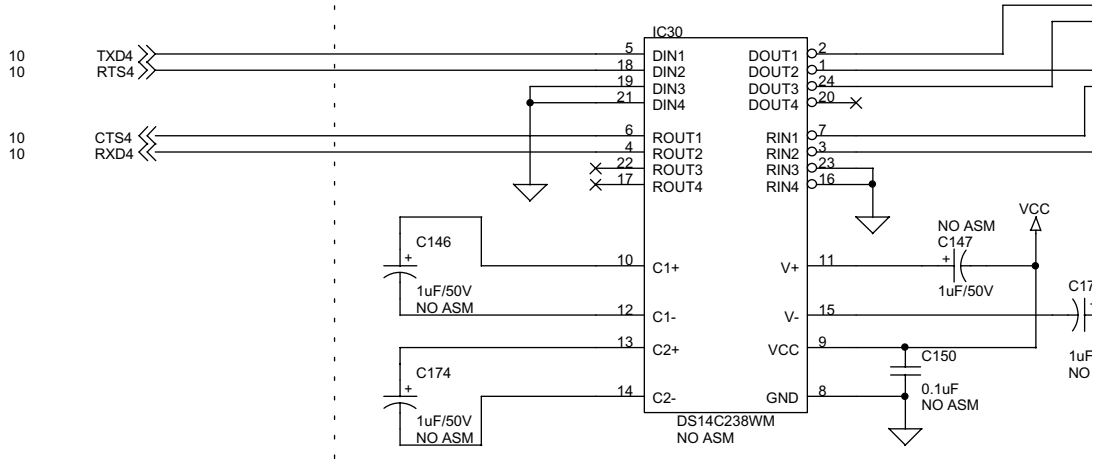

L5 PLP3216S
L26 MMZ1608D121BTA00
1_CLK-
RV2 AVR-M1608C270KT2AB
NO ASM
L25 MMZ1608D121BTA00
1_CLK+
RV1 AVR-M1608C270KT2AB
S1_DATA0+
100 R354 NO ASM
S1_DATA0-
L6 PLP3216S
L28 MMZ1608D121BTA00
1_DATA0-
RV4 AVR-M1608C270KT2AB
L27 MMZ1608D121BTA00
1_DATA0+
RV3 AVR-M1608C270KT2AB
L7 PLP3216S
R357 NO ASM
L30 MMZ1608D121BTA00
1_DATA1-
RV6 AVR-M1608C270KT2AB
L29 MMZ1608D121BTA00
1_DATA1+
RV5 AVR-M1608C270KT2AB
S/1_DBL+
100 R360 NO ASM
S/1_DBL-
L8 PLP3216S
L32 MMZ1608D121BTA00 NO ASM
/1_DBL-
RV8 AVR-M1608C080MTAAB NO ASM
L31 MMZ1608D121BTA00 NO ASM
/1_DBL+
RV7 AVR-M1608C080MTAAB NO ASM
L9 PLP3216S
R363 NO ASM
L34 MMZ1608D121BTA00
2_CLK-
RV10 AVR-M1608C080MTAAB NO ASM
L33 MMZ1608D121BTA00
2_CLK+
RV9 AVR-M1608C080MTAAB NO ASM
S2_DATA0+
100 R366 NO ASM
S2_DATA0-
L10 PLP3216S
L36 MMZ1608D121BTA00 NO ASM
2_DATA0-
RV12 AVR-M1608C080MTAAB NO ASM
L35 MMZ1608D121BTA00 NO ASM
2_DATA0+
RV11 AVR-M1608C080MTAAB NO ASM
L11 PLP3216S
S2_DATA1+
100 R369 NO ASM
S2_DATA1-
L38 MMZ1608D121BTA00 NO ASM
2_DATA1-
RV14 AVR-M1608C080MTAAB NO ASM
L37 MMZ1608D121BTA00 NO ASM
2_DATA1+
RV13 AVR-M1608C080MTAAB NO ASM
S/2_DBL+
100 R372 NO ASM
S/2_DBL-
L12 PLP3216S
L40 MMZ1608D121BTA00 NO ASM
/2_DBL-
RV16 AVR-M1608C080MTAAB NO ASM
L39 MMZ1608D121BTA00 NO ASM
/2_DBL+
RV15 AVR-M1608C080MTAAB NO ASM
SLCDD01
L13 PLP3216S
LCDD01
SLCDD00
LCDD00
SLCDD11
L14 PLP3216S
LCDD11
SLCDD10
LCDD10
SLCDD21
L15 PLP3216S
LCDD21
SLCDD20
LCDD20
SLCDD31
L16 PLP3216S
LCDD31
SLCDD30
LCDD30
SFRAME_P
L18 PLP3216S
FRAME_P
SFRAME_M
FRAME_M
SM_P
L17 PLP3216S
M_P
SM_M
M_M
SLP_P
L19 PLP3216S
LP_P
SLP_M
LP_M
SCP_P
L20 PLP3216S
CP_P
SCP_M
CP_M
3.3V
R215 10K
R217 10K
R200 2.2K
IC38
TD62503F
TXD2
DTR2
RXD2
DSR2
DTR2
TXD2
RXD2
DSR2
VCC
C186
0.1uF

[SIO]

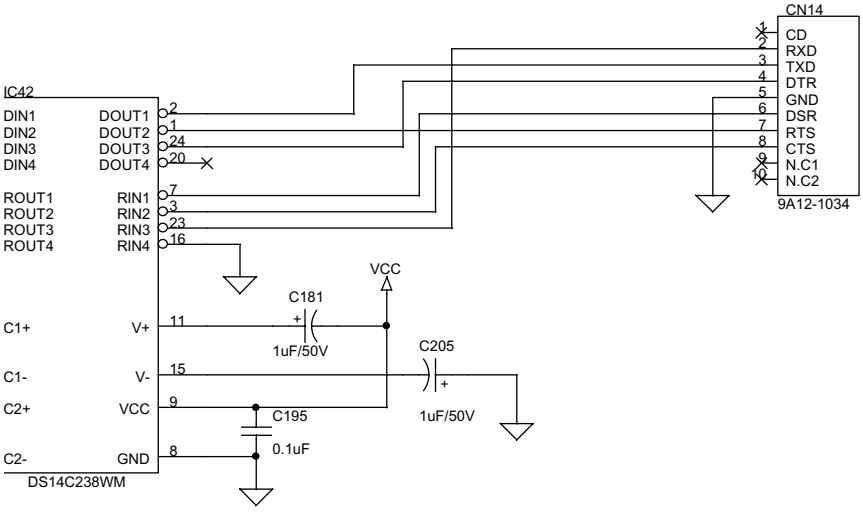
[RIC I/F (SIO #5)]



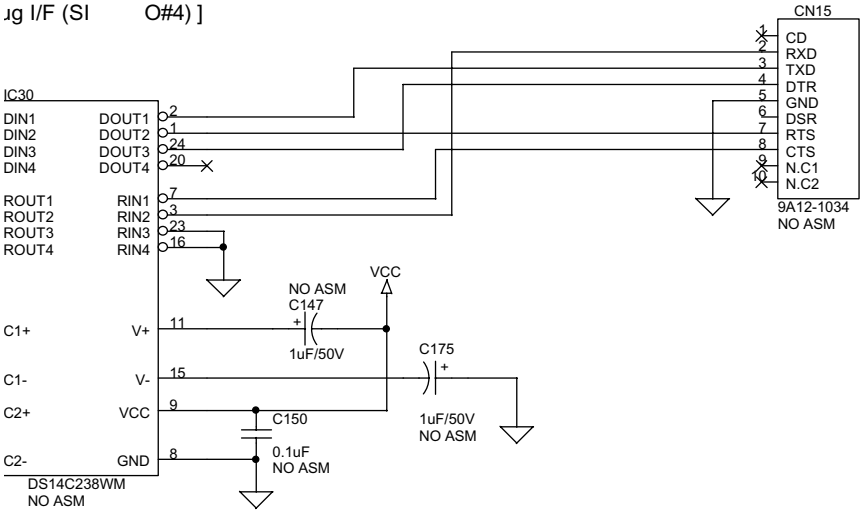
[Debug I/F (SI O#4)]



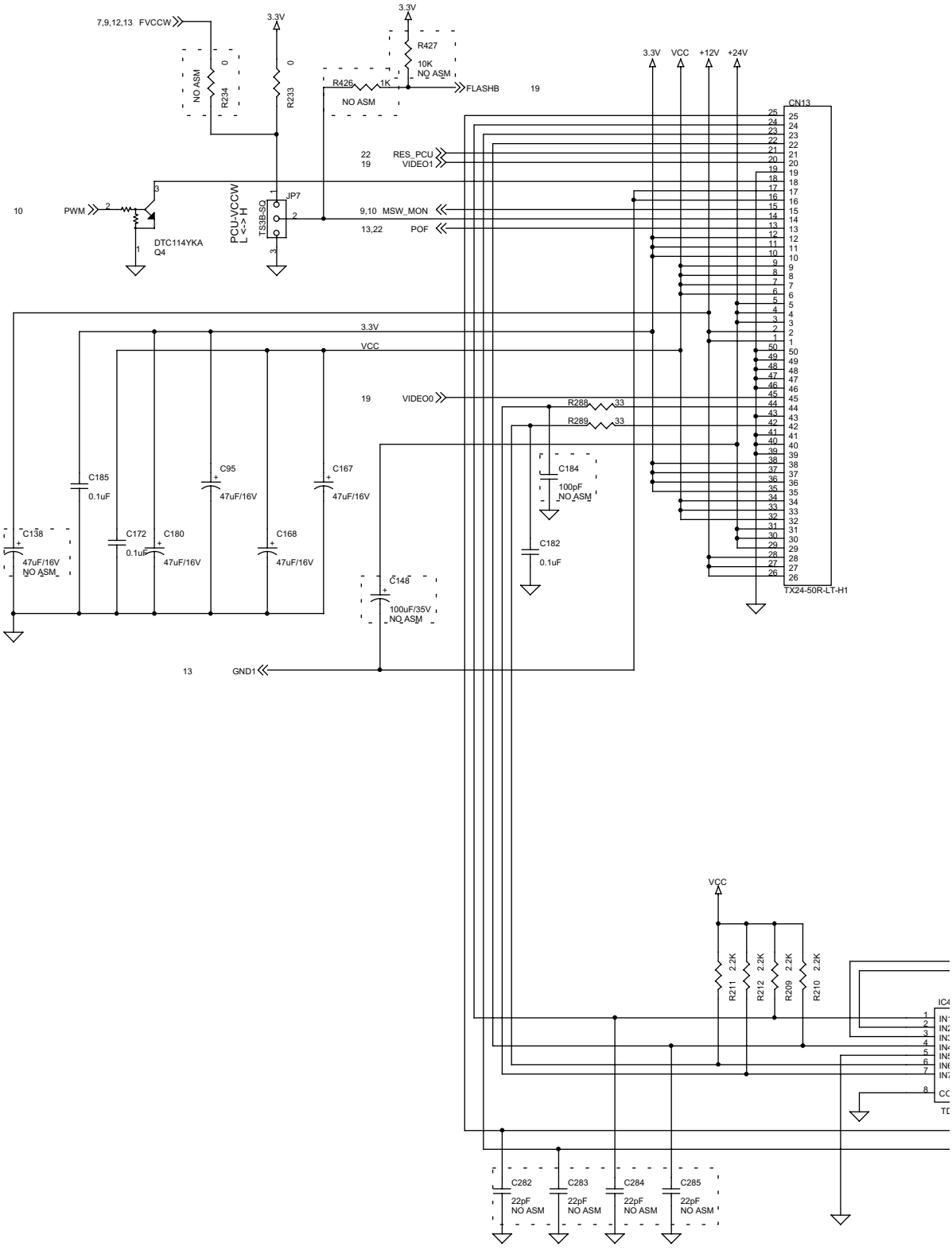
C I/F (SIO #5)]

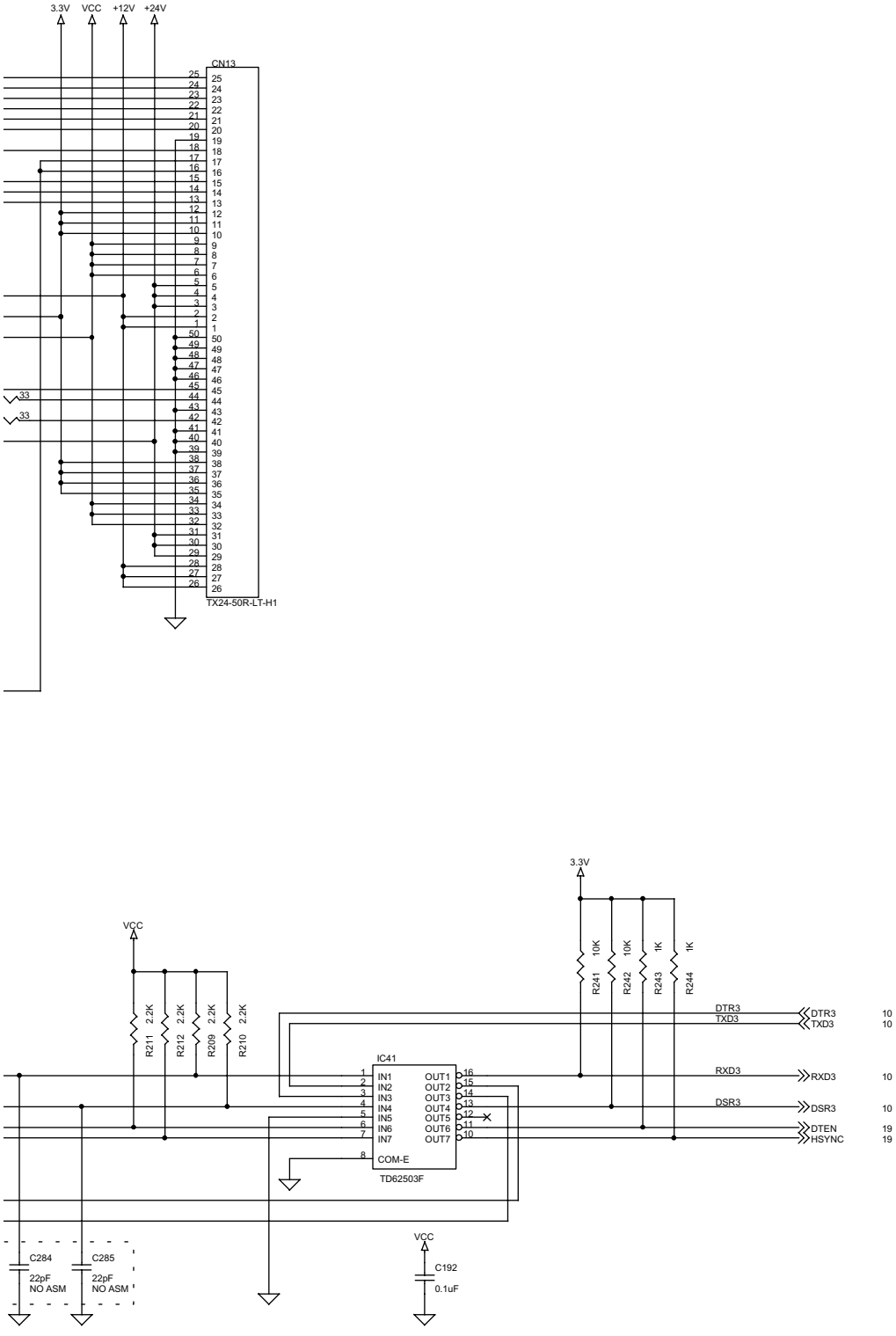


ug I/F (SI O#4)]

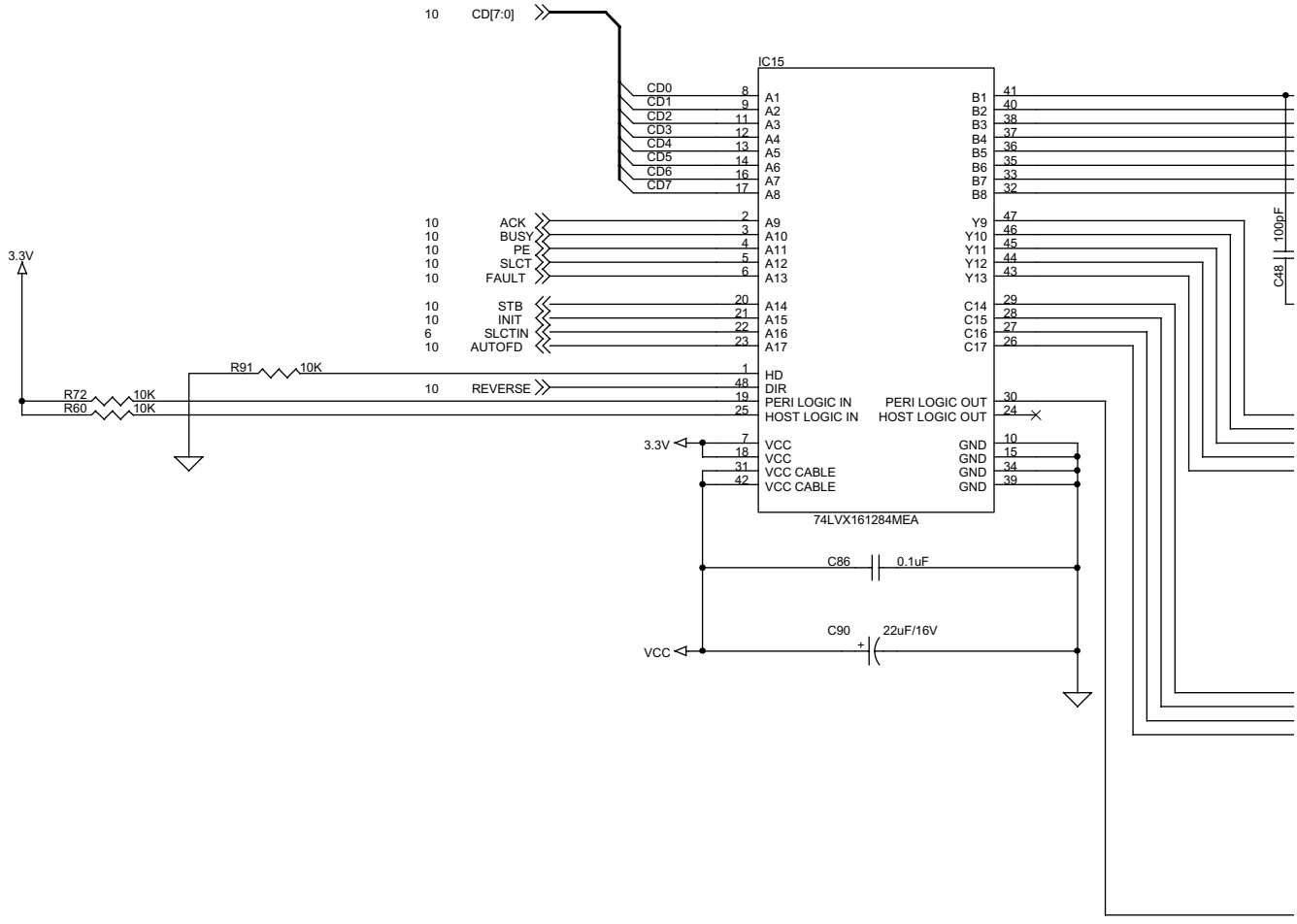


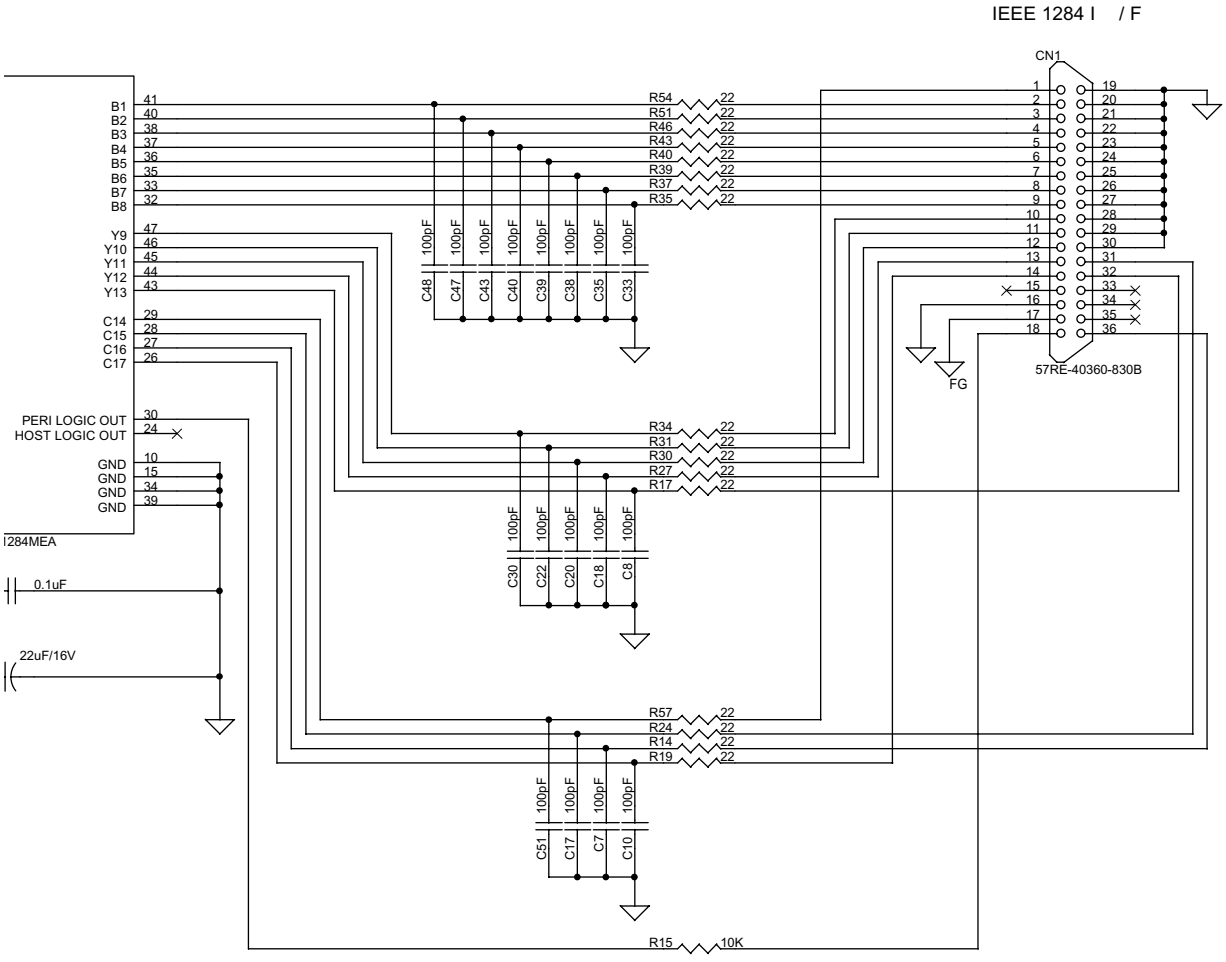
[ENGINE I/F CN]


7,9,12,13 FVCCW
3.3V
NO ASM
R234
0
R233
0
R426
1K
NO ASM
R427
10K
NO ASM
FLASHB
19
3.3V VCC +12V +24V
CN13
22 RES_PCU
19 VIDEO1
10 PWM
DTC114YKA
Q4
PCU-VCCW
L <-> H
TS3B-SQ
JP7
9,10 MSW_MON
13,22 POF
3.3V
VCC
19 VIDEO0
R288 33
R289 33
C185 0.1uF
C95 47uF/16V
C167 47uF/16V
C138 47uF/16V NO ASM
C172 0.1uF
C180 47uF/16V
C168 47uF/16V
C148 100uF/35V NO ASM
C184 100pF NO ASM
C182 0.1uF
TX24-50R-LT-H1
13 GND1
VCC
R211 2.2K
R212 2.2K
R209 2.2K
R210 2.2K
C282 22pF NO ASM
C283 22pF NO ASM
C284 22pF NO ASM
C285 22pF NO ASM

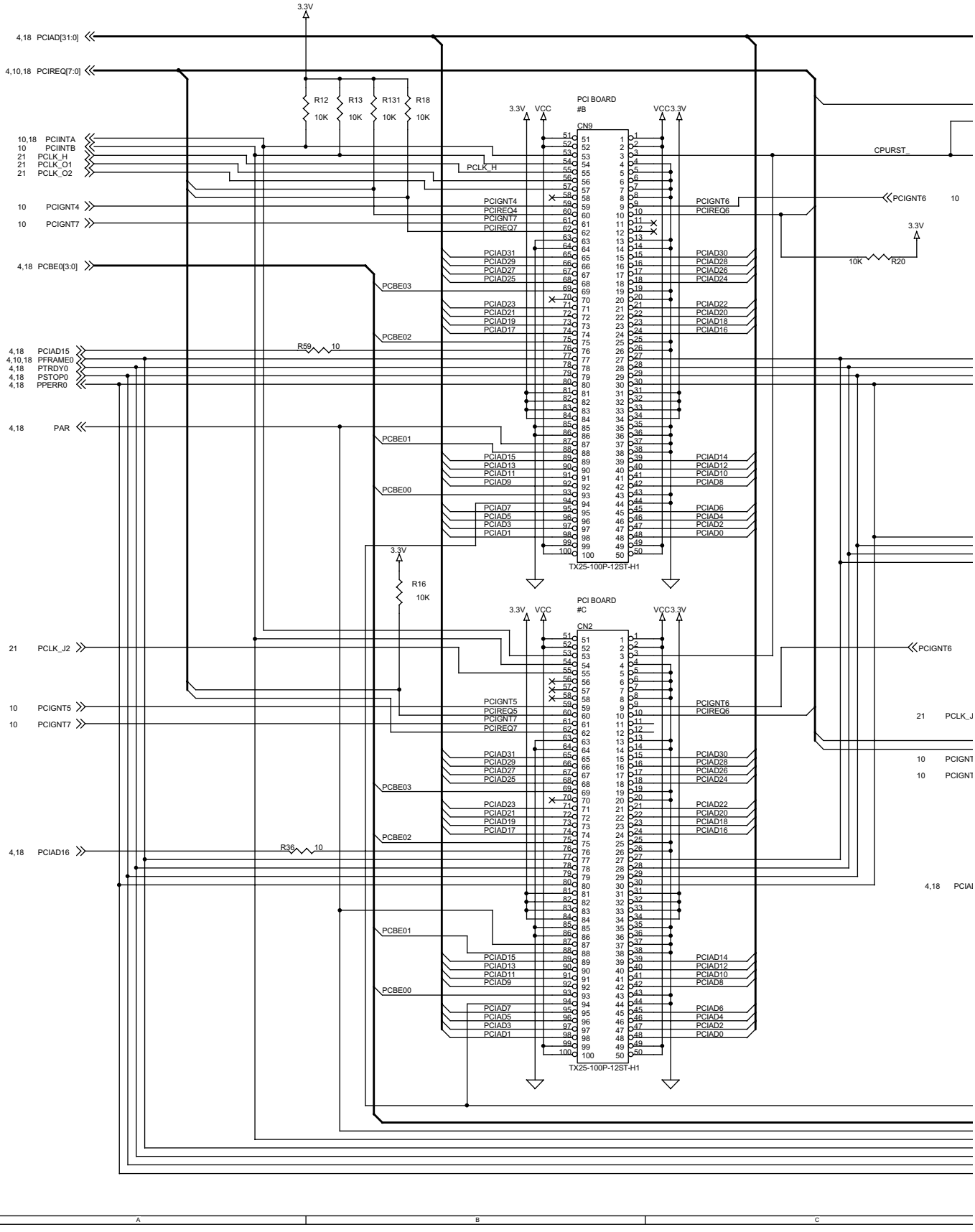

3.3V
VCC
+12V
+24V
CN13
TX24-50R-LT-H1
33
33
3.3V
VCC
R241 10K
R242 10K
R243 1K
R244 1K
R211 2.2K
R212 2.2K
R209 2.2K
R210 2.2K
IC41
IN1
IN2
IN3
IN4
IN5
IN6
IN7
COM-E
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
TD62503F
DTR3
TXD3
RXD3
DSR3
DTEN
HSYNC
C284
22pF
NO ASM
C285
22pF
NO ASM
VCC
C192
0.1uF

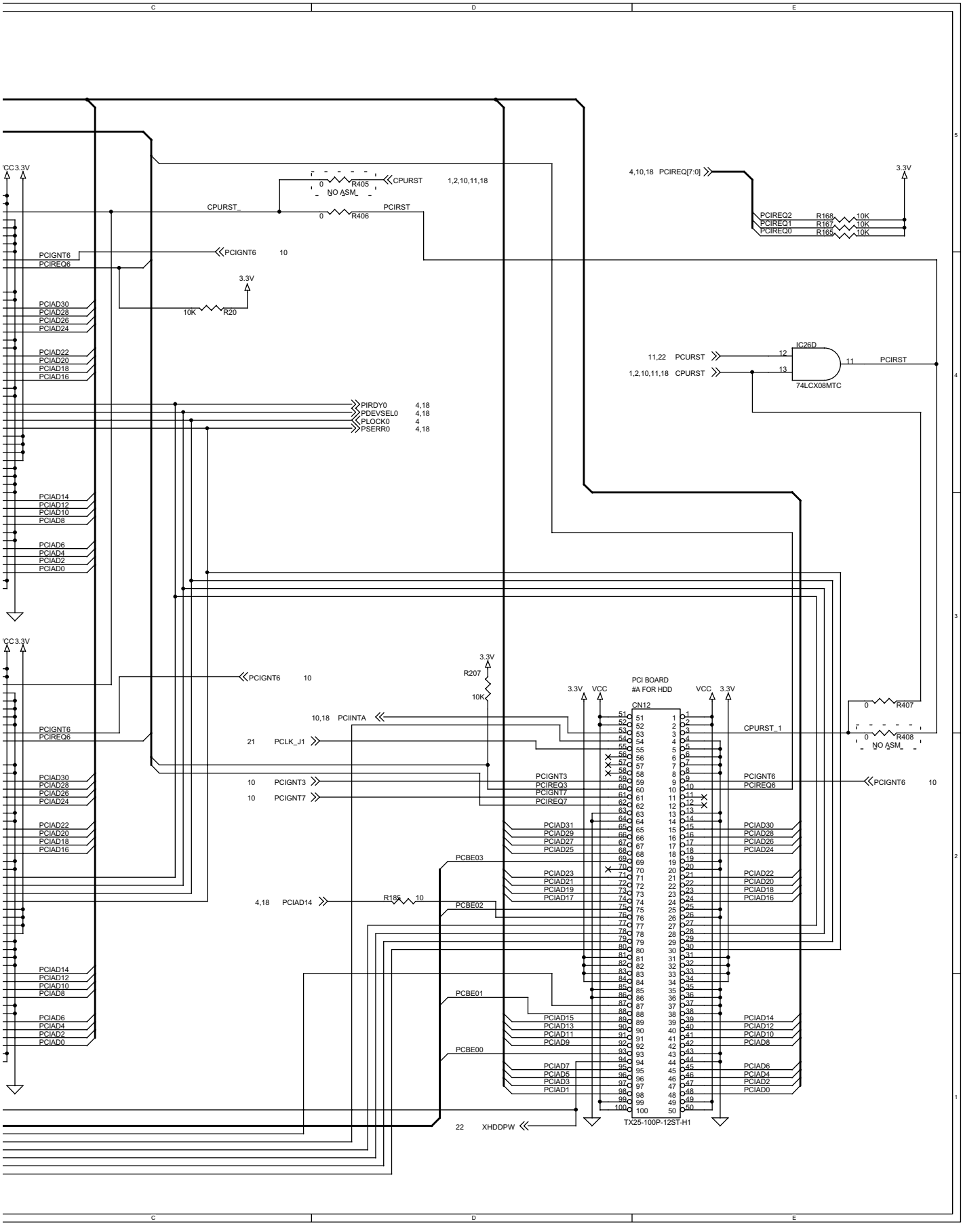
[IEEE1284 I/F]

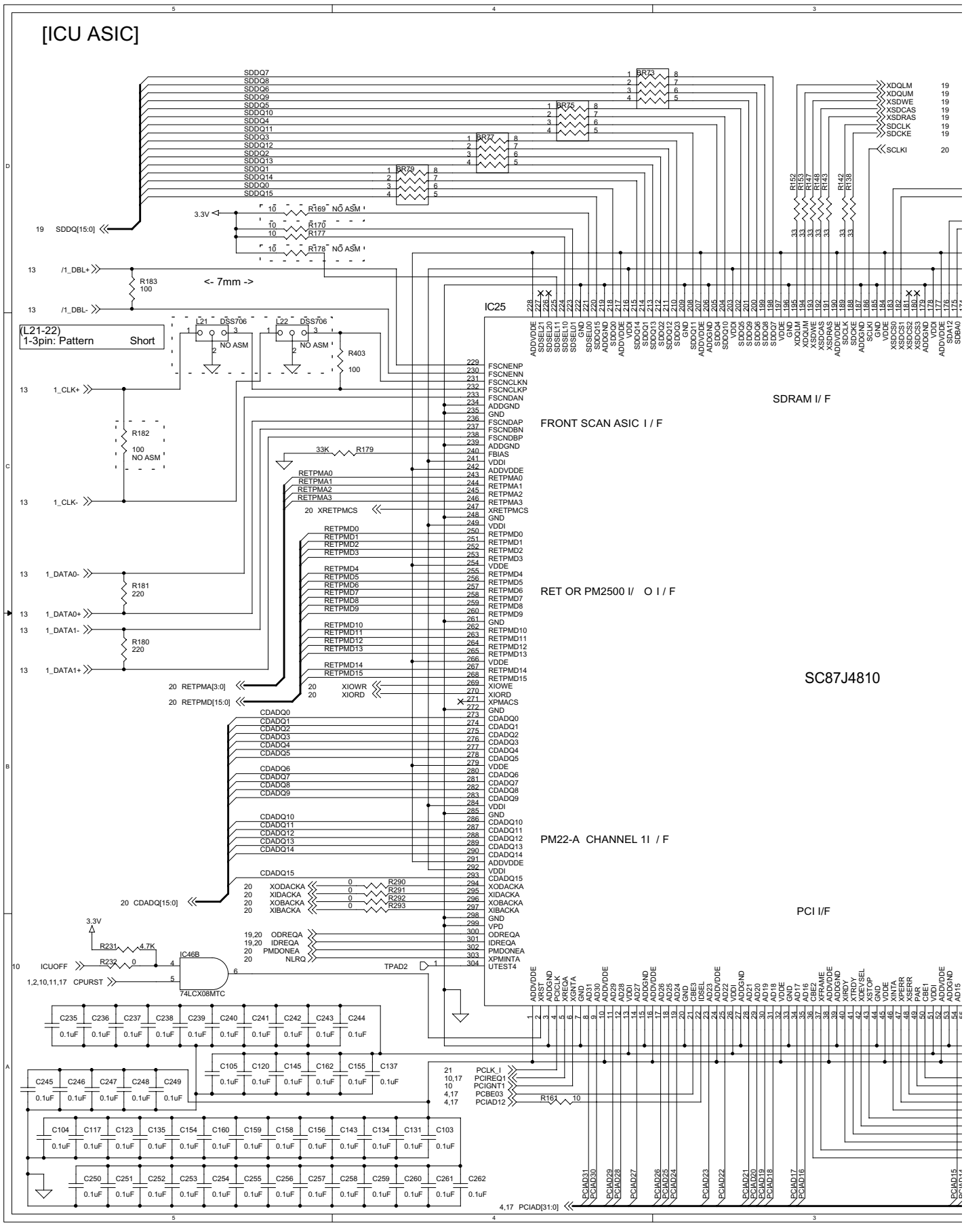

10 CD[7:0]
IC15
CD0 8 A1
CD1 9 A2
CD2 11 A3
CD3 12 A4
CD4 13 A5
CD5 14 A6
CD6 16 A7
CD7 17 A8
B1 41
B2 40
B3 38
B4 37
B5 36
B6 35
B7 33
B8 32
10 ACK 2 A9
10 BUSY 3 A10
10 PE 4 A11
10 SLCT 5 A12
10 FAULT 6 A13
Y9 47
Y10 46
Y11 45
Y12 44
Y13 43
C48 100pF
10 STB 20 A14
10 INIT 21 A15
6 SLCTIN 22 A16
10 AUTOFD 23 A17
C14 29
C15 28
C16 27
C17 26
3.3V
R91 10K
1 HD
10 REVERSE 48 DIR
R72 10K
R60 10K
19 PERI LOGIC IN
25 HOST LOGIC IN
PERI LOGIC OUT 30
HOST LOGIC OUT 24
3.3V
7 VCC
18 VCC
31 VCC CABLE
42 VCC CABLE
GND 10
GND 15
GND 34
GND 39
74LVX161284MEA
C86 0.1uF
C90 22uF/16V
VCC

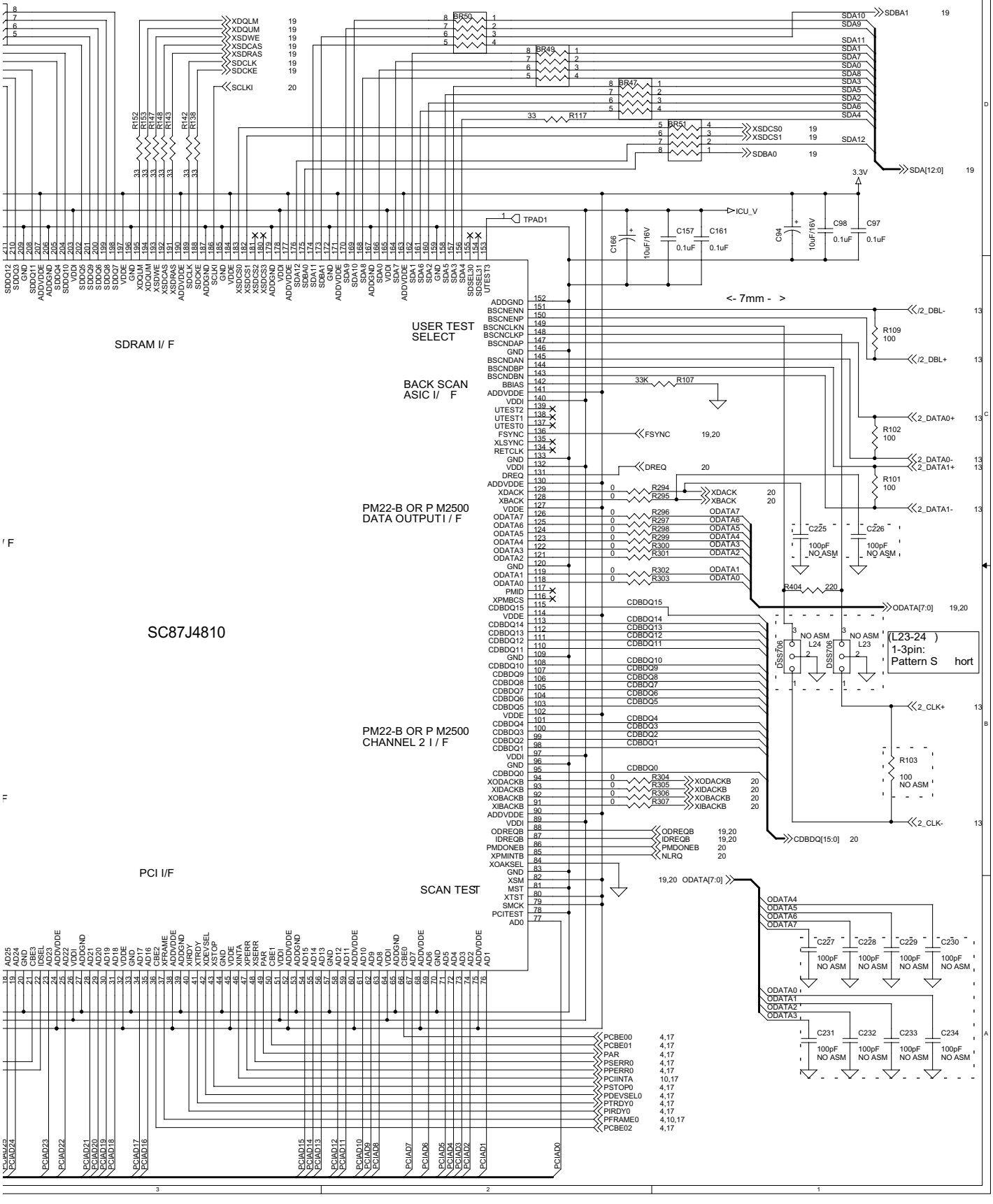

IEEE 1284 I / F
CN1
57RE-40360-830B
FG
B1 41
B2 40
B3 38
B4 37
B5 36
B6 35
B7 33
B8 32
Y9 47
Y10 46
Y11 45
Y12 44
Y13 43
C14 29
C15 28
C16 27
C17 26
PERI LOGIC OUT 30
HOST LOGIC OUT 24
GND 10
GND 15
GND 34
GND 39
I284MEA
0.1uF
22uF/16V
R54 22
R51 22
R46 22
R43 22
R40 22
R39 22
R37 22
R35 22
R34 22
R31 22
R30 22
R27 22
R17 22
R57 22
R24 22
R14 22
R19 22
R15 10K
100pF
C48 C47 C43 C40 C39 C38 C35 C33
C30 C22 C20 C18 C8
C51 C17 C7 C10

[PCI BOARD CONNECTOR]

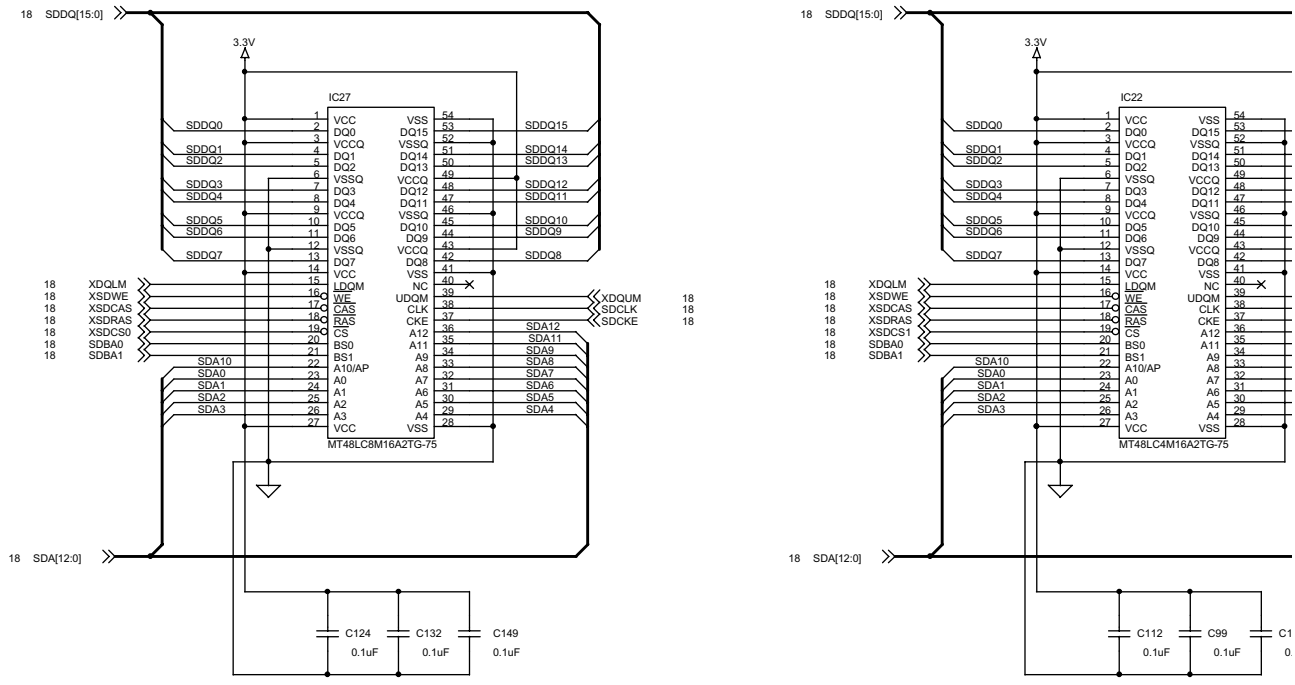


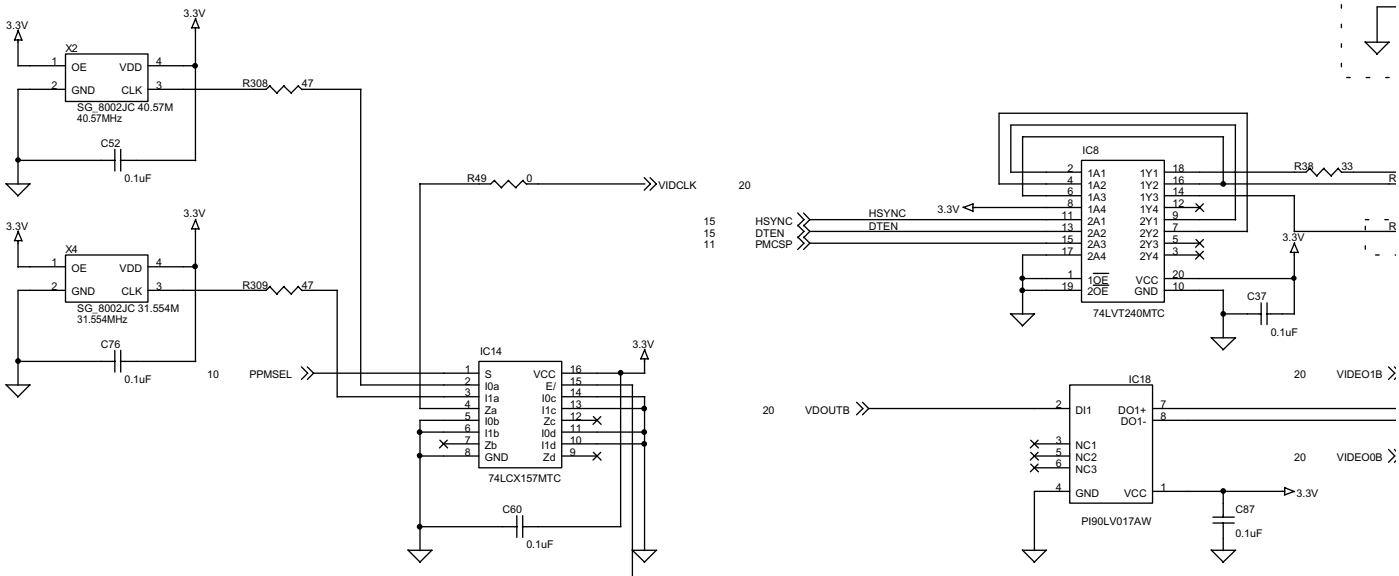

'CC 3.3V
R405
0
NO ASM
CPURST
1,2,10,11,18
CPURST_
R406
PCIRST
4,10,18 PCIREQ[7:0]
3.3V
PCIREQ2
PCIREQ1
PCIREQ0
R168
R167
R165
10K
PCIGNT6
PCIREQ6
10
PCIAD30
PCIAD28
PCIAD26
PCIAD24
PCIAD22
PCIAD20
PCIAD18
PCIAD16
R20
11,22 PCURST
1,2,10,11,18 CPURST
IC26D
74LCX08MTC
PIRDY0
PDEVSEL0
PLOCK0
PSERR0
4,18
PCIAD14
PCIAD12
PCIAD10
PCIAD8
PCIAD6
PCIAD4
PCIAD2
PCIAD0
R207
10K
10,18 PCIINTA
21 PCLK_J1
10 PCIGNT3
10 PCIGNT7
PCI BOARD
#A FOR HDD
CN12
VCC
PCIGNT3
PCIREQ3
PCIGNT7
PCIREQ7
PCIAD31
PCIAD29
PCIAD27
PCIAD25
PCIAD23
PCIAD21
PCIAD19
PCIAD17
PCIAD15
PCIAD13
PCIAD11
PCIAD9
PCIAD7
PCIAD5
PCIAD3
PCIAD1
PCBE03
PCBE02
PCBE01
PCBE00
4,18 PCIAD14
R185
22 XHDDPW
TX25-100P-12ST-H1
CPURST_1
R407
R408
NO ASM

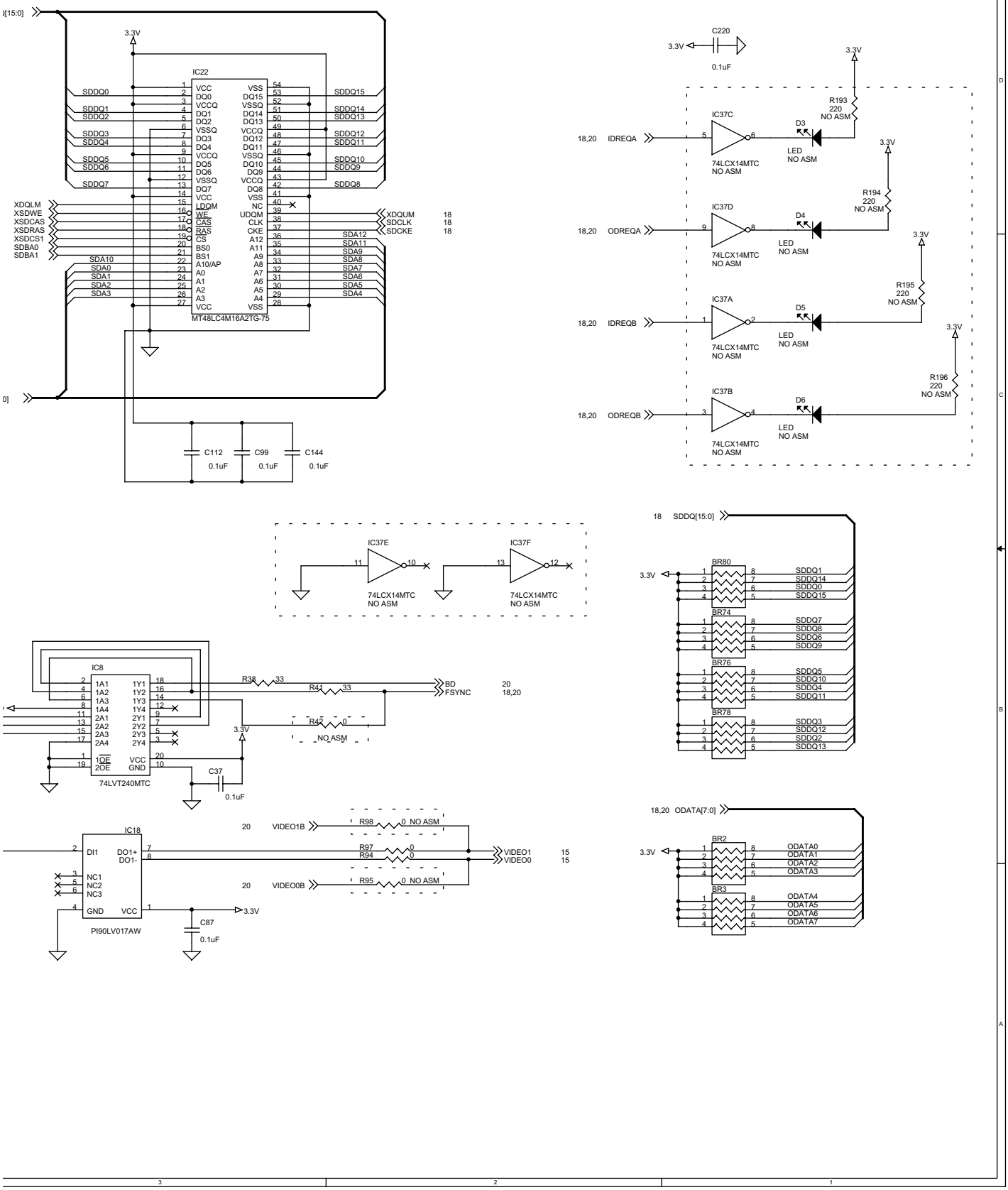

[ICU ASIC]
IC25
SC87J4810
FRONT SCAN ASIC I / F
RET OR PM2500 I/ O I / F
PM22-A CHANNEL 1I / F
SDRAM I/ F
PCI I/F
(L21-22)
1-3pin: Pattern Short
<- 7mm ->
NO ASM
74LCX08MTC

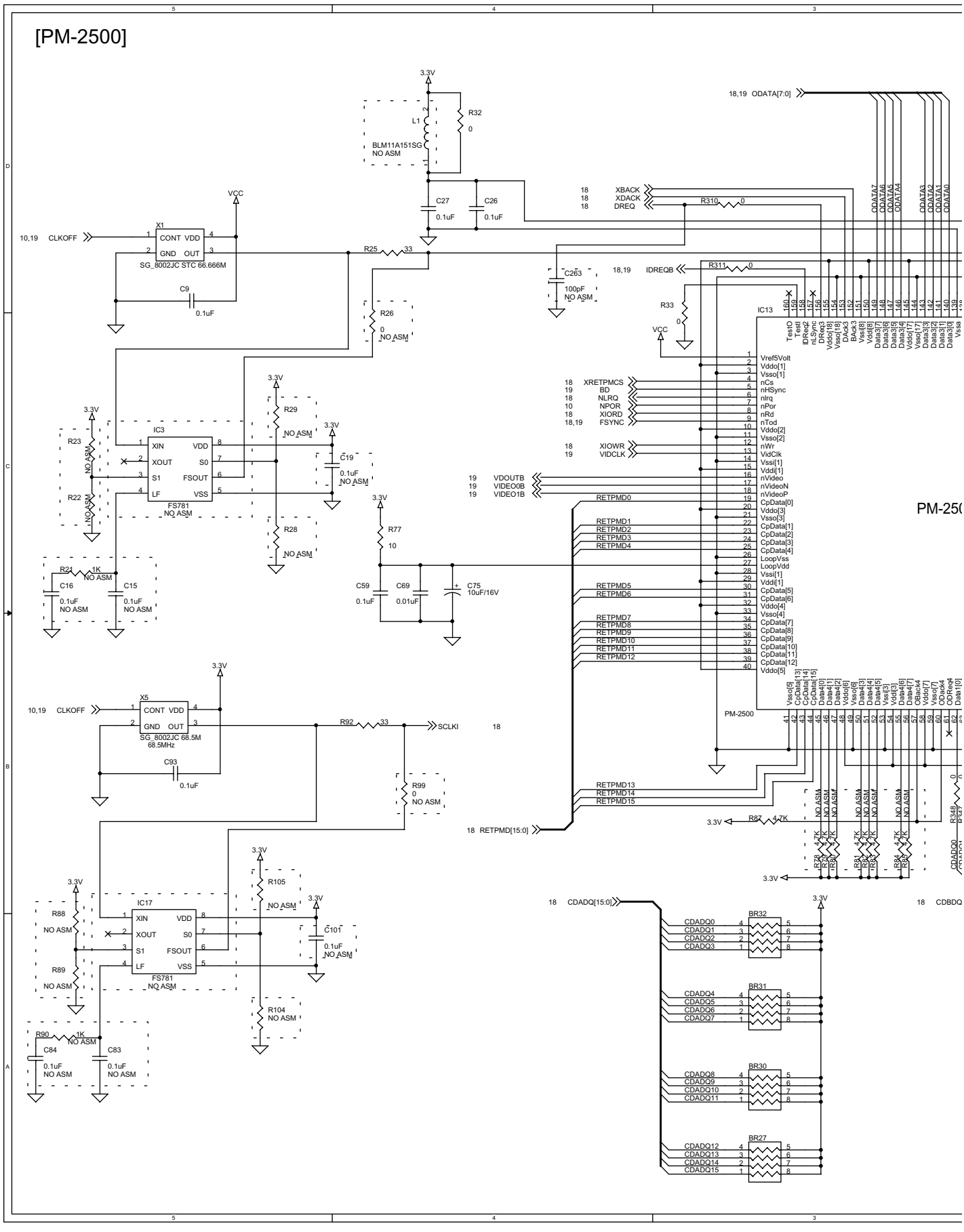

SDRAM I/ F
USER TEST SELECT
BACK SCAN ASIC I/ F
PM22-B OR P M2500 DATA OUTPUTI / F
SC87J4810
PM22-B OR P M2500 CHANNEL 2 I / F
PCI I/F
SCAN TEST
<- 7mm - >
(L23-24) 1-3pin: Pattern S hort
NO ASM
100pF NO ASM

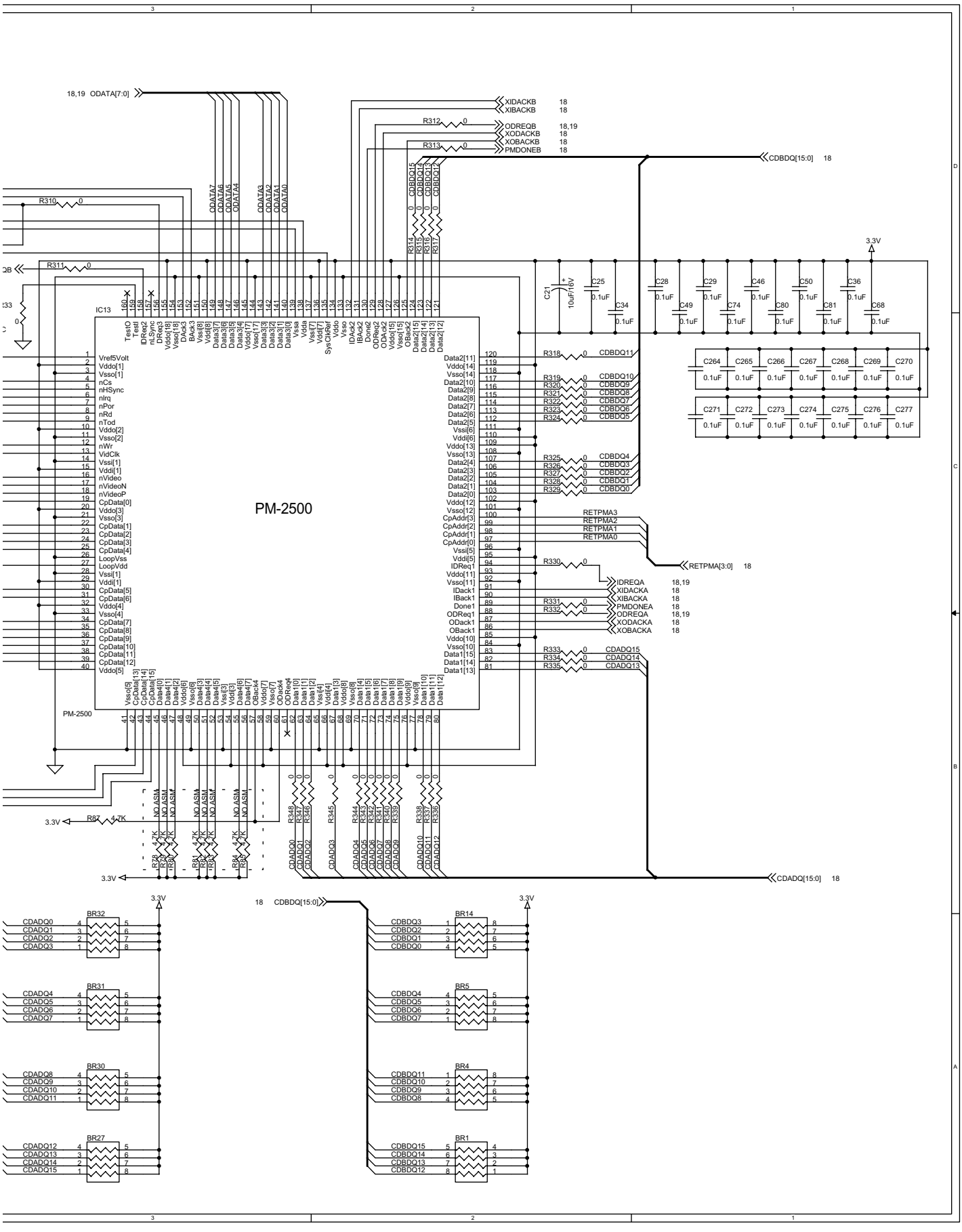
[ICU SDRAM]


18 SDDQ[15:0]
3.3V
IC27
SDDQ0
SDDQ1
SDDQ2
SDDQ3
SDDQ4
SDDQ5
SDDQ6
SDDQ7
SDDQ15
SDDQ14
SDDQ13
SDDQ12
SDDQ11
SDDQ10
SDDQ9
SDDQ8
18 XDQLM
18 XSDWE
18 XSDCAS
18 XSDRAS
18 XSDCS0
18 SDBA0
18 SDBA1
SDA10
SDA0
SDA1
SDA2
SDA3
XDQUM 18
SDCLK 18
SDCKE 18
SDA12
SDA11
SDA9
SDA8
SDA7
SDA6
SDA5
SDA4
MT48LC8M16A2TG-75
18 SDA[12:0]
C124 0.1uF
C132 0.1uF
C149 0.1uF
IC22
MT48LC4M16A2TG-75
C112 0.1uF
C99 0.1uF

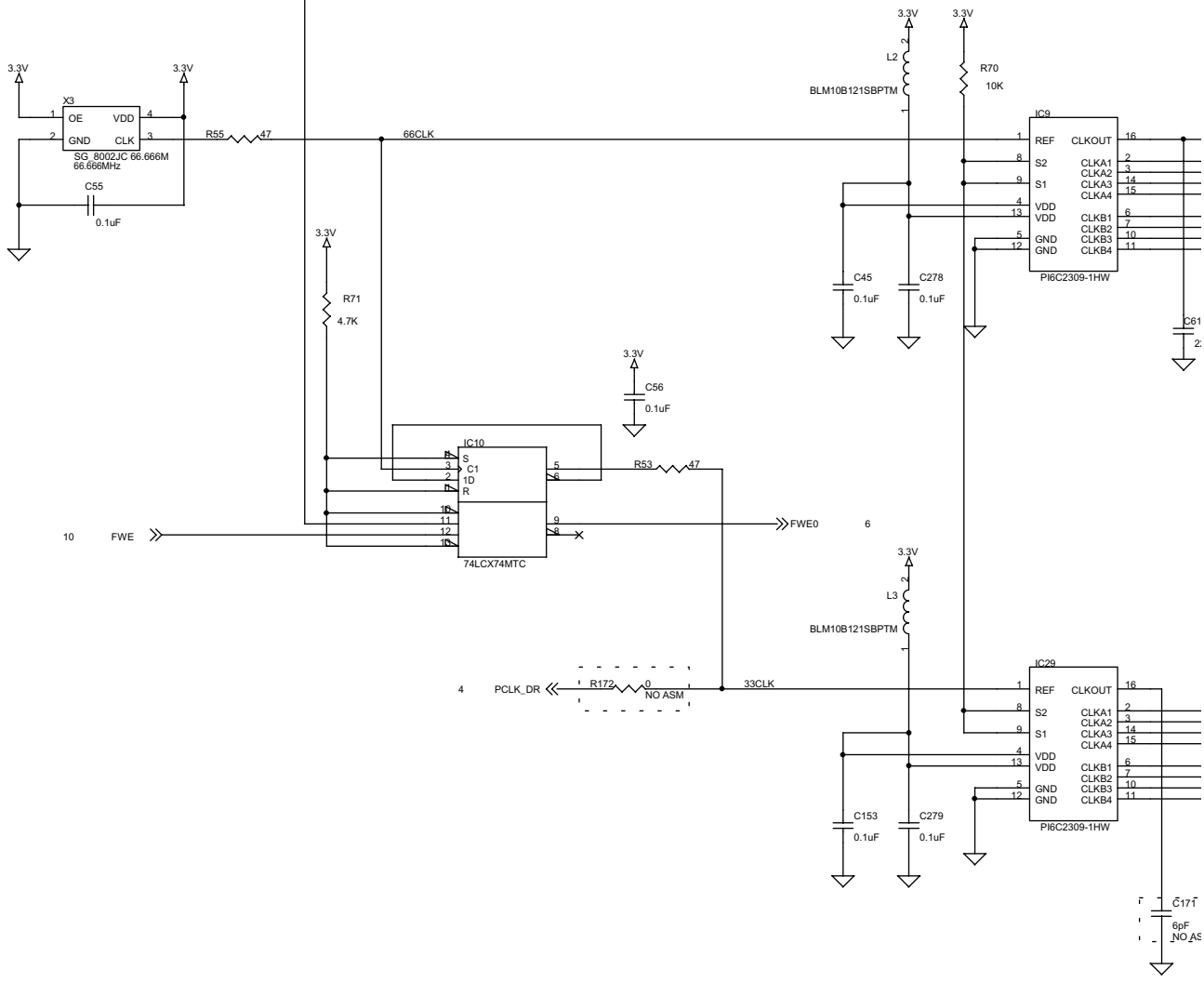

3.3V
X2
SG_8002JC 40.57M
40.57MHz
R308 47
C52 0.1uF
X4
SG_8002JC 31.554M
31.554MHz
R309 47
C76 0.1uF
10 PPMSEL
R49 0
VIDCLK 20
IC14
74LCX157MTC
C60 0.1uF
IC43F
10,20 CLKOFF
74LCX14MTC
IC8
74LVT240MTC
C37 0.1uF
15 HSYNC
15 DTEN
11 PMCSP
R38 33
IC18
PI90LV017AW
20 VDOUTB
20 VIDEO1B
20 VIDEO0B
C87 0.1uF
IC11D
IC11B
7 FLASHA
15 FLASHB
13 FLASHC
FLASHO 10
74LCX32MTC
C58 0.1uF

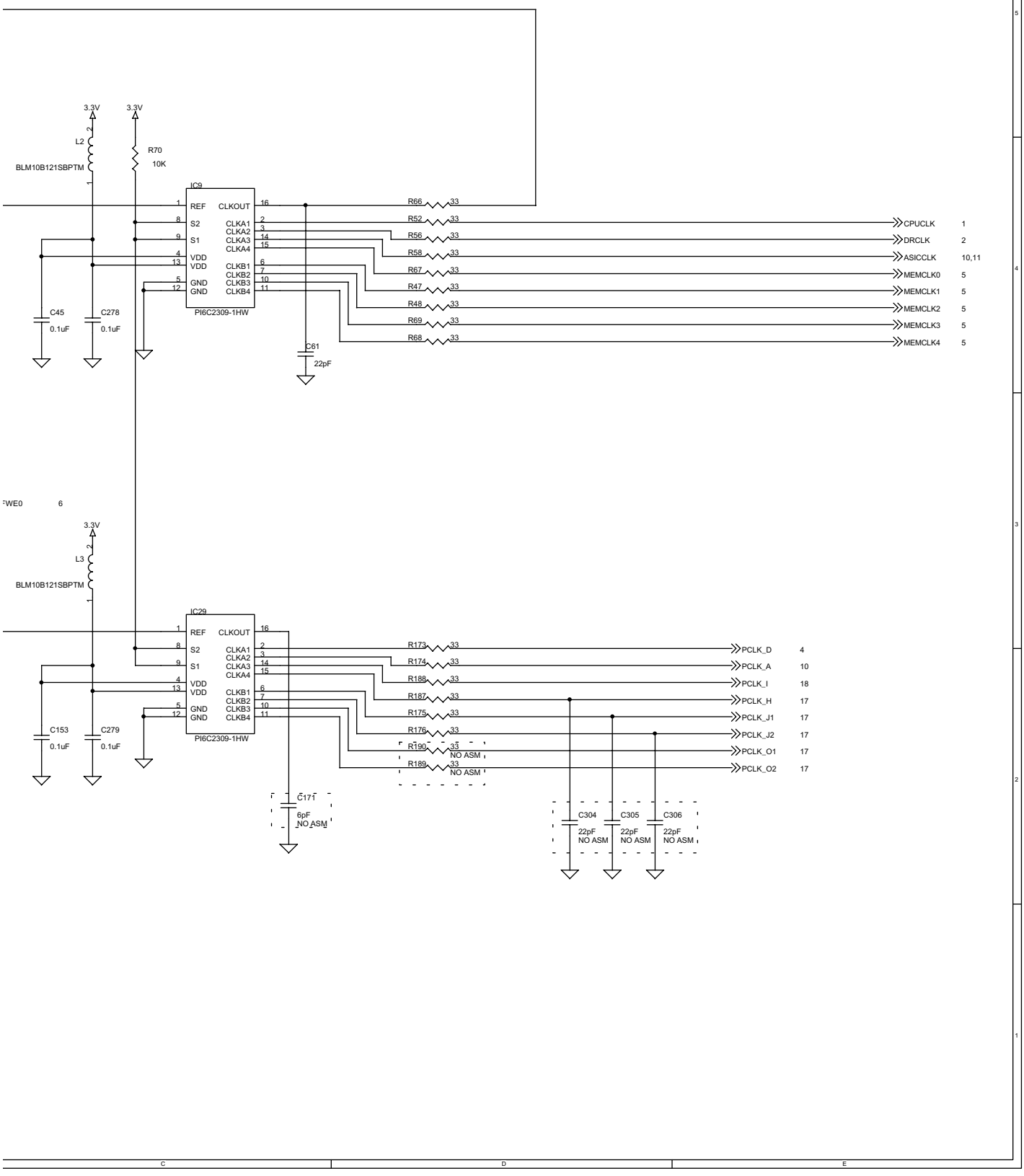

IC22
MT48LC4M16A2TG-75
3.3V
SDDQ0
SDDQ1
SDDQ2
SDDQ3
SDDQ4
SDDQ5
SDDQ6
SDDQ7
SDDQ15
SDDQ14
SDDQ13
SDDQ12
SDDQ11
SDDQ10
SDDQ9
SDDQ8
XDQLM
XSDWE
XSDCAS
XSDRAS
XSDCS1
SDBA0
SDBA1
SDA10
SDA0
SDA1
SDA2
SDA3
SDA12
SDA11
SDA9
SDA8
SDA7
SDA6
SDA5
SDA4
XDQUM 18
SDCLK 18
SDCKE 18
C112 0.1uF
C99 0.1uF
C144 0.1uF
C220 0.1uF
IC37C
IC37D
IC37A
IC37B
74LCX14MTC NO ASM
D3
D4
D5
D6
LED NO ASM
R193 220 NO ASM
R194 220 NO ASM
R195 220 NO ASM
R196 220 NO ASM
18,20 IDREQA
18,20 ODREQA
18,20 IDREQB
18,20 ODREQB
IC37E
IC37F
18 SDDQ[15:0]
BR80
BR74
BR76
BR78
SDDQ1
SDDQ14
SDDQ0
SDDQ15
SDDQ7
SDDQ8
SDDQ6
SDDQ9
SDDQ5
SDDQ10
SDDQ4
SDDQ11
SDDQ3
SDDQ12
SDDQ2
SDDQ13
IC8
74LVT240MTC
R38 33
R41 33
R42 0 NO ASM
BD 20
FSYNC 18,20
C37 0.1uF
IC18
PI90LV017AW
20 VIDEO1B
20 VIDEO0B
R98 0 NO ASM
R97 0
R94 0
R95 0 NO ASM
VIDEO1 15
VIDEO0 15
C87 0.1uF
18,20 ODATA[7:0]
BR2
BR3
ODATA0
ODATA1
ODATA2
ODATA3
ODATA4
ODATA5
ODATA6
ODATA7


[PM-2500]
PM-250
PM-2500
3.3V
VCC
L1
BLM11A151SG
NO ASM
R32
0
C27
0.1uF
C26
0.1uF
X1
CONT VDD
GND OUT
SG_8002JC STC 66.666M
10,19 CLKOFF
C9
0.1uF
R25
33
C263
100pF
NO ASM
18,19 IDREQB
R311
R310
18 XBACK
18 XDACK
18 DREQ
18,19 ODATA[7:0]
R33
R26
0
NO ASM
IC13
IC3
XIN
XOUT
S1
LF
VDD
S0
FSOUT
VSS
FS781
NO ASM
R23
R22
R29
R28
C19
0.1uF
NO ASM
R24
1K
NO ASM
C16
C15
0.1uF
NO ASM
R77
10
C59
0.1uF
C69
0.01uF
C75
10uF/16V
18 XRETPMCS
19 BD
18 NLRQ
10 NPOR
18 XIORD
18,19 FSYNC
18 XIOWR
19 VIDCLK
19 VDOUTB
19 VIDEO0B
19 VIDEO1B
RETPMD0
RETPMD1
RETPMD2
RETPMD3
RETPMD4
RETPMD5
RETPMD6
RETPMD7
RETPMD8
RETPMD9
RETPMD10
RETPMD11
RETPMD12
RETPMD13
RETPMD14
RETPMD15
18 RETPMD[15:0]
X5
10,19 CLKOFF
SG_8002JC 68.5M
68.5MHz
C93
0.1uF
R92
33
SCLKI
18
R99
0
NO ASM
R87
4.7K
IC17
R88
R89
R105
R104
C101
0.1uF
NO ASM
R90
1K
NO ASM
C84
C83
0.1uF
NO ASM
18 CDADQ[15:0]
BR32
BR31
BR30
BR27
CDADQ0
CDADQ1
CDADQ2
CDADQ3
CDADQ4
CDADQ5
CDADQ6
CDADQ7
CDADQ8
CDADQ9
CDADQ10
CDADQ11
CDADQ12
CDADQ13
CDADQ14
CDADQ15
18 CDBDQ

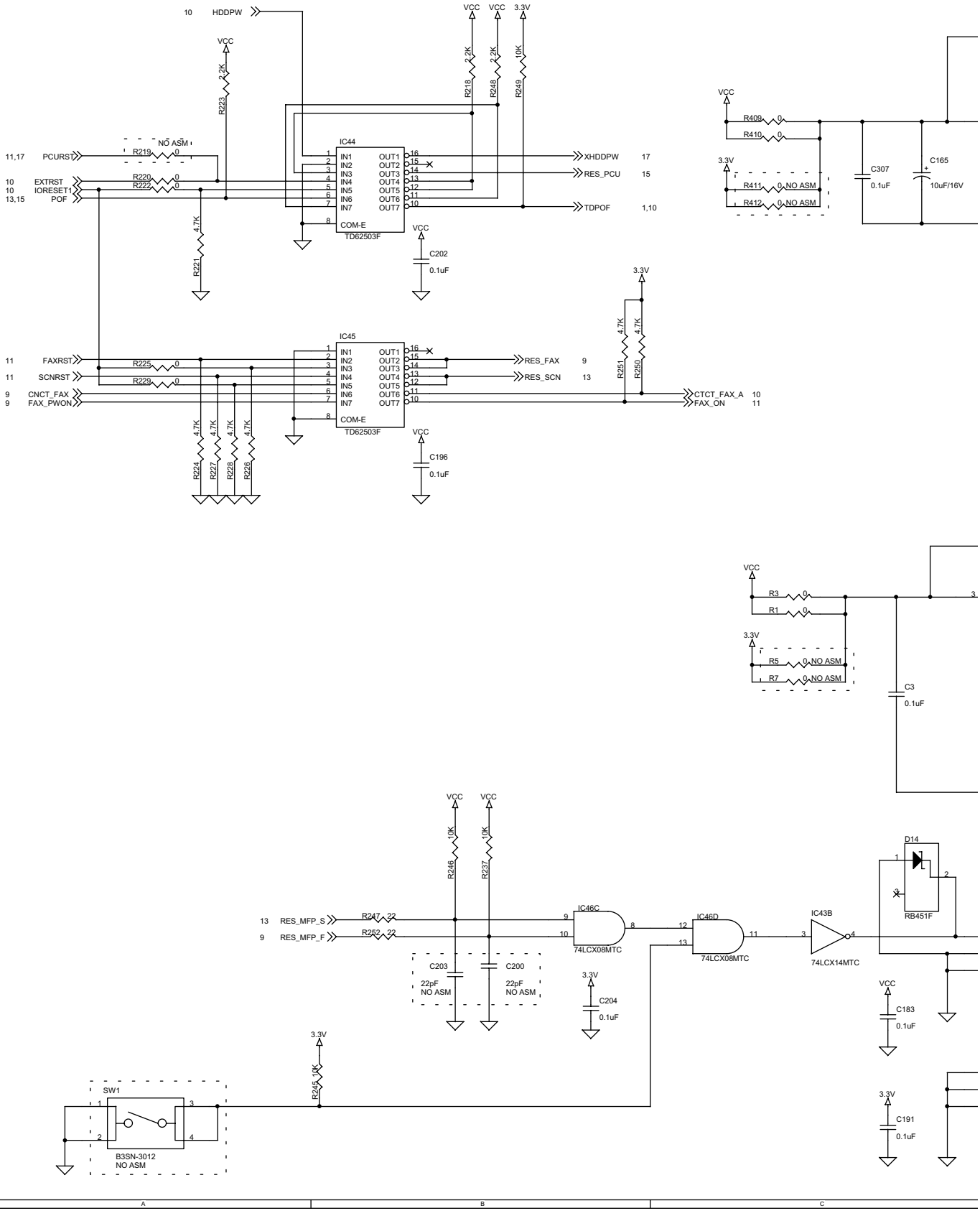

PM-2500
IC13
18,19 ODATA[7:0]
CDBDQ[15:0] 18
CDADQ[15:0] 18
RETPMA[3:0] 18
3.3V
XIDACKB 18
XIBACKB 18
ODREQB 18,19
XODACKB 18
XOBACKB 18
PMDONEB 18
IDREQA 18,19
XIDACKA 18
XIBACKA 18
PMDONEA 18
ODREQA 18,19
XODACKA 18
XOBACKA 18
BR32
BR31
BR30
BR27
BR14
BR5
BR4
BR1

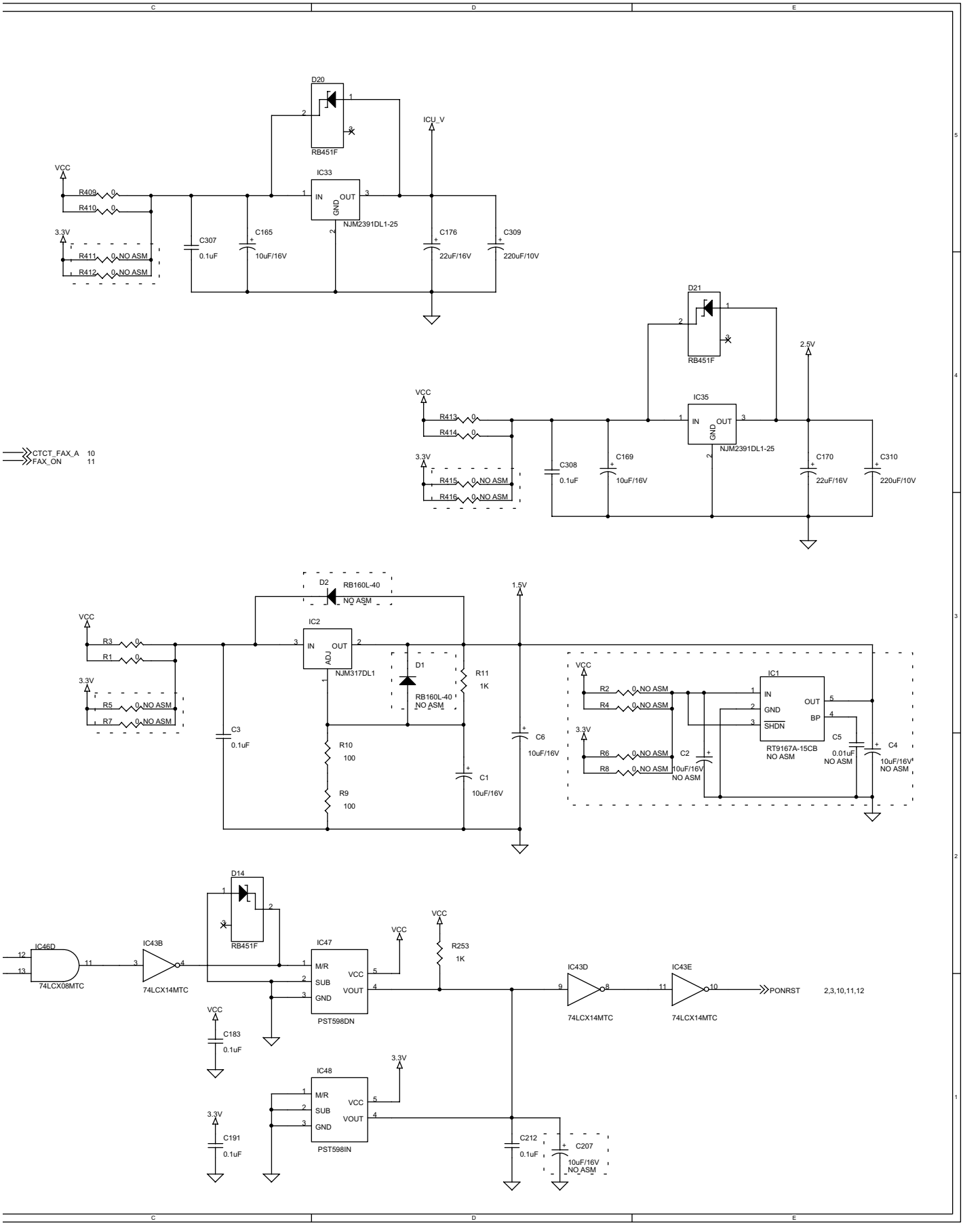
[CLOCK]


3.3V
X3
OE
VDD
GND
CLK
SG_8002JC 66.666M
66.666MHz
C55
0.1uF
R55
47
66CLK
L2
BLM10B121SBPTM
R70
10K
IC9
REF
CLKOUT
S2
S1
VDD
GND
CLKA1
CLKA2
CLKA3
CLKA4
CLKB1
CLKB2
CLKB3
CLKB4
PI6C2309-1HW
C45
C278
C61
R71
4.7K
C56
IC10
S
C1
1D
R
74LCX74MTC
R53
FWE
FWE0
L3
PCLK_DR
R172
NO ASM
33CLK
C153
C279
C171
6pF


3.3V
3.3V
L2
BLM10B121SBPTM
R70
10K
IC9
REF
CLKOUT
S2
CLKA1
CLKA2
S1
CLKA3
CLKA4
VDD
VDD
CLKB1
CLKB2
GND
CLKB3
GND
CLKB4
PI6C2309-1HW
C45
0.1uF
C278
0.1uF
C61
22pF
R66 33
R52 33
R56 33
R58 33
R67 33
R47 33
R48 33
R69 33
R68 33
CPUCLK 1
DRCLK 2
ASICCLK 10,11
MEMCLK0 5
MEMCLK1 5
MEMCLK2 5
MEMCLK3 5
MEMCLK4 5
WE0 6
3.3V
L3
BLM10B121SBPTM
IC29
PI6C2309-1HW
C153
0.1uF
C279
0.1uF
C171
6pF
NO ASM
C304
22pF
NO ASM
C305
22pF
NO ASM
C306
22pF
NO ASM
R173 33
R174 33
R188 33
R187 33
R175 33
R176 33
R190 33
NO ASM
R189 33
NO ASM
PCLK_D 4
PCLK_A 10
PCLK_I 18
PCLK_H 17
PCLK_J1 17
PCLK_J2 17
PCLK_O1 17
PCLK_O2 17

[RESET / POWER]


10 HDDPW
VCC
2.2K
R223
R218
R248
R249
10K
IC44
11,17 PCURST
10 EXTRST
10 IORESET
13,15 POF
R219 NO ASM
R220
R222
4.7K
R221
C202
0.1uF
XHDDPW 17
RES_PCU 15
TDPOF 1,10
TD62503F
R409
R410
R411 NO ASM
R412 NO ASM
C307
0.1uF
C165
10uF/16V
3.3V
IC45
11 FAXRST
11 SCNRST
9 CNCT_FAX
9 FAX_PWON
R225
R229
R224
R227
R228
R226
C196
RES_FAX 9
RES_SCN 13
R251
R250
CTCT_FAX_A 10
FAX_ON 11
R3
R1
R5 NO ASM
R7 NO ASM
C3
0.1uF
R246
R237
13 RES_MFP_S
9 RES_MFP_F
R247 22
R252 22
C203
22pF
NO ASM
C200
22pF
NO ASM
C204
IC46C
74LCX08MTC
IC46D
74LCX08MTC
IC43B
74LCX14MTC
D14
RB451F
C183
C191
SW1
R245
B3SN-3012
NO ASM


D20
RB451F
ICU_V
VCC
R409 0
R410 0
IC33
IN
OUT
GND
NJM2391DL1-25
3.3V
R411 0 NO ASM
R412 0 NO ASM
C307
0.1uF
C165
10uF/16V
C176
22uF/16V
C309
220uF/10V
D21
RB451F
2.5V
VCC
R413 0
R414 0
IC35
IN
OUT
GND
NJM2391DL1-25
3.3V
R415 0 NO ASM
R416 0 NO ASM
C308
0.1uF
C169
10uF/16V
C170
22uF/16V
C310
220uF/10V
CTCT_FAX_A 10
FAX_ON 11
D2
RB160L-40
NO ASM
1.5V
VCC
R3 0
R1 0
IC2
IN
OUT
ADJ
NJM317DL1
3.3V
R5 0 NO ASM
R7 0 NO ASM
D1
RB160L-40
NO ASM
R11
1K
C3
0.1uF
R10
100
R9
100
C1
10uF/16V
C6
10uF/16V
VCC
R2 0 NO ASM
R4 0 NO ASM
IC1
IN
GND
SHDN
OUT
BP
RT9167A-15CB
NO ASM
3.3V
R6 0 NO ASM
R8 0 NO ASM
C2
10uF/16V
NO ASM
C5
0.01uF
NO ASM
C4
10uF/16V
NO ASM
D14
RB451F
IC46D
74LCX08MTC
IC43B
74LCX14MTC
IC47
M/R
SUB
GND
VCC
VOUT
PST598DN
VCC
R253
1K
IC43D
74LCX14MTC
IC43E
74LCX14MTC
PONRST
2,3,10,11,12
VCC
C183
0.1uF
IC48
M/R
SUB
GND
VCC
VOUT
PST598IN
3.3V
C191
0.1uF
C212
0.1uF
C207
10uF/16V
NO ASM

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung

Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA,CANADA)

Contains lithium-ion battery. Must be disposed of properly.
Remove the battery from the product and contact
federal or state environmental
agencies for information on recycling and disposal options.

SHARP

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SHARP CORPORATION
Digital Document System Group
Products Quality Assurance Department
Yamatokoriyama, Nara 639-1186, Japan
2002 February Printed in Japan (N)